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ABSTRACT

This study attempts to evaluate Toronto-area schools built using the Study of Educational Facilities (SEF) building system from the standpoint of the teachers and students who use the schools. While the SEF building system did not dictate an open-space plan, all local school boards in the Toronto area designed their SEF schools with varying degrees of open space. Emphasis of the study was on analyzing students' and teachers' reactions to open-plan schools, rather than to SEF schools as such; however, only SEF schools were included in the survey. An extensive questionnaire was administered to a sample of 979 grade five and grade eight students from 22 SEF schools to determine their attitudes toward the open educational program and building design. A longer and more sophisticated questionnaire was completed by 535 of the 586 professional staff members at the same 22 schools. Responses to the different questionnaire items are presented in graph and table form, grouped in separate chapters according to subject matter. Replicas of the student and teacher questionnaires and sample floor plans of several SEF schools are included in the appendix. (JG)

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SEF

THE METROPOLITAN TORONTO SCHOOL BOARD

STUDY OF EDUCATIONAL FACILITIES

SEF ACADEMIC EVALUATION
A Report On SEF Open Plan Schools

2

September, 1975

INTRODUCTION

This report is the second study to evaluate the SEF Schools from the standpoint of the teachers and students who use them. It differs from the earlier one in that some schools had been operating for three years (as opposed to one year) and in that it includes seven intermediate level schools. In this study considerably more attention has been given to program and to questions about open plan, as distinct from SEF, schools. But because only SEF schools were included, comparisons between open plan and traditional plan schools are not possible. Unfortunately it was not possible to make direct measures of the academic and non-academic performance of the students. (Appendix VI reviews research on academic achievement in open plan schools.)

The usual qualifications that customarily accompany research reports are warranted. There is considerable certainty about the raw findings and considerable caution about explaining them. Readers interested in obtaining an overview of the findings are referred to Chapter 4. The extensive appendices are intended primarily as aids to other researchers.

Many people helped with the report. The Ontario Institute for Studies in Education and the Institute for Behavioral Research at York University performed the statistical analyses. The principals of the SEF schools were most helpful in arranging the data collection. The time and energy of the teachers and students who completed the questionnaires is much appreciated. They also helped enliven the report by providing the quotations sprinkled throughout it.

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CHAPTER 1

BACKGROUND

1. Open Plan Research

Research on open plan schools has repeatedly emphasized the dearth of research on open plan schools. The building of open plan schools began in the late 1950's, accelerated during the 1960's, but there was only a smattering of research on such schools during this period. Even the words "open", "openness", "open-mindedness" were rare in the research literature. In the retrospective index volume to Dissertations Abstracts International which covers the years 1939 - 1969, there are only a couple of dozen entries under "open". None of these refer to open space. The heading "Open Plan Schools" does not appear in Education Index until Vol. 21, July, 1970. The same heading is in the ERIC Thesaurus for 1970 but during 1970 and even 1971 there are only a minor number of entries.

There was a fair amount of research being done on non-gradedness, team teaching, individualization, but there was no rush into research on open plan schools. Individual school boards were among the first into the field.[1] And school boards have continued their interest by sponsoring some of the more extensive studies.[2] Individual open plan schools, educational research institutes, schools of education, teachers' federations, a sprinkling of reports from Australia, England and New Zealand, and a virtual flood of doctoral students have produced over 125 studies in the last four years. There are no overall definitive conclusions. Some findings are contradictory, many are inconclusive.

Many studies were done at one point in time, some during the first year of a school's operation. Many do not define the type of open plan school; the large majority do not define differing types of programs; very little research has been done at the intermediate level. Despite the vaunted importance of the library resource centre in open plan schools, little research has been done in this area.

The studies vary. A brief look through many of their introductory reviews of related literature and research indicates the breadth of the research in the field. However, it also indicates that researchers have taken a shotgun approach to look at open plan schools and to find instruments which would measure what was really happening. Many researchers found existing instruments unsuitable for open plan schools and worked to develop their own. While academic achievement has been examined in more than 20 studies there are, as yet, no clear consistent trends; a review of the available studies is in Appendix VI, p. 60-69.

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[1] See Bibliography of Research on Open Plan Schools, App. V, p.248-258; Halton County; 1970 - Calgary, Edmonton (Fowler), Howard County, Maryland (Johnson), Saskatoon, Vancouver (McRae).

[2] In Ontario: Metropolitan Toronto School Board; Wentworth County S.S. Board; York County School Board. In U.S.: Broward County, Florida.

Measures of non-academic performance in open plan schools have been talked about, but not extensively developed.[1] Certainly the relationship between styles of teaching in open plan and students' attitudes toward information and their willingness and skill in working together have not been explored.

2. SEF Building System And E5

Metropolitan Toronto has a two-tiered educational system: the six Area Boards (East York, Etobicoke, North York, Scarborough, Toronto and York) have autonomy in teaching methods, curriculum and the employment of teachers; the Metropolitan Board has the overall responsibility for the capital and current budgets.[2]

The Study of Educational Facilities (SEF) was established in 1966 under the sponsorship of the Metropolitan Toronto School Board, with financial assistance from Educational Facilities Laboratories (EFL) of New York City and the Ontario Department of Education.

Faced with both rising school costs and the need for new facilities, the School Board's initial objective in organizing SEF was to obtain a building system of modular parts which would offer an up-to-date learning environment, without increasing costs. A full time staff was appointed to carry out the project work.

Studies of the educational requirements for the various school levels were conducted by SEF educational research officers, with assistance from consultants representing the Area Boards of Education and the Department of Education. The results of their findings were published in three reports.[3]

E1: Educational Specifications and User Requirements for Elementary (K-6 Schools)

E2: Educational Specifications and User Requirements for Intermediate Schools

E3: Educational Specifications and User Requirements for Secondary Schools

Because this project was carried out in a metropolitan political framework, the building system had to meet certain unique demands. One of these was satisfying the differing education requirements of each area board. The system had to allow enough choice and variation to accommodate local needs and preferences. Each board selected its own architect(s). Thus, although each school was made from identical parts, few schools look exactly alike.

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[1] A recent study developed an instrument to measure social and emotional factors. Richard A. Musemeche and Sam Adams, "Open Space Schools and the Non-Cognitive Domain," CEFP Journal (September-October 1974): 4-6.

[2] For further information see: Metropolitan Toronto School Board, "A Chronological Annotated Bibliography of the Metropolitan Toronto School Board", SEF B-3 rev. ed., (Toronto, 1973).

[3] A limited number of these reports are still available from McGraw-Hill Co. of Canada, 330 Progress Avenue, Scarborough, Ontario. Attn: Mr. Peter Bradley.

Each of these reports describes the facilities needed at each school level - elementary, intermediate and secondary. Program developments and educational trends affect the need for and type of space. SEF reports emphasize the necessity for maximum flexibility; all interior walls and associated electrical, mechanical, heating and ventilating equipment should be easily and economically relocatable. Such schools can be spatially responsive to educational programs rather than inhibiting to development and change.

Every area in the school from kindergarten to technical education facilities was described in detail. Common to all three levels were the need for library resource centres, music areas, physical education facilities, visual arts areas and administration centres.

The architects on the SEF technical staff in cooperation with outside consultants prepared performance specifications for the First SEF Building System. The building was seen as ten sub-systems and the successful bidder for each sub-system was awarded a contract for all the schools in the project (1,000,000 square feet gross guaranteed minimum).

Based on the excellent performance of the first series of schools, the performance specifications were revised and the Second SEF Building System[1] was tendered. The Second System schools, retained the environmental qualities and flexibility of the First System but at considerably improved first costs.[2]

While the SEF building system did not dictate open areas, all the Area Boards in Metropolitan Toronto designed their SEF schools with varying degrees of open space.[3]

Prior to the opening of the schools, plans were developed for an evaluation. The study was designed by the SEF academic staff with assistance from an outside consultant. It was decided that for the first year of the study the investigation would be on a broad basis and would include only elementary (K-6) schools.

The results of this study were published as E5: Academic Evaluation: An Interim Report (1971).[4] Secondary analysis was conducted at York University with the

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1. For additional information on the technical aspects see the following SEF publications: Introduction to the First SEF Building System, T.1, 1968, Various paging (OUT OF PRINT). Specifications for the First SEF Building System, T.2, 1968, various paging (OUT OF PRINT). Catalogue of the First SEF Building System, 2 Vols., 1969 ($50.00 plus $5.00 mailing and handling charges). The Metropolitan Toronto School Board SEF Building System; Sub-System Proposals for the First SEF Building System, T.7, 1971, various paging, ($10.00 plus $1.00 mailing and handling charges). Specifications for the Second SEF Building System, T.8, 1972, various paging ($15.00 plus $1.50 mailing and handling charges).
2. A complete list of the SEF buildings including their size and cost is presented as Appendix VIII, p. 268.
3. See variety of floor plans in Appendix IX, p. 269.
4. A summary of the findings from E5 are in Appendix VII, p. 265.

support of a Grant-in-Aid for Educational Research and Development from the Ontario Ministry of Education.[1]

These two reports, E5 and the secondary analysis, dealt primarily with users' satisfaction and utilization of their environment in eight SEF open plan schools. The basis for comparison was four non-SEF open plan schools, and four non-SEF traditional plan schools.

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1. Jerome T. Durlak, Joan Lehman and Janet McClain, The School Environment: A Study of User Patterns, Ontario Ministry of Education, Grants-in-Aid of Educational Research (Toronto: York University, 1973), 40 p.

CHAPTER 2

METHODOLOGY

1. Instruments

The teachers' and students' questionnaires used in the earlier study (E5) formed the basis for the development of those used in the current study.[1] As a result of numerous visits to open plan schools and discussions with students, teachers and principals working there, extensive revisions were made. The growing literature on open plan schools and the more extensive experience of practitioners extended our interests beyond questions of satisfaction with and utilization of physical facilities.

The questionnaire used for students contained 65 questions; 27 of these were identical with and six very similar to questions in E5. The teachers' instrument was longer and more sophisticated. It had 71 direct questions, 33 of the 71 questions were identical to E5 questions, and 14 were similar. Four new sections were added to the original teacher questionnaire. Firstly, in a 14 item section concerning the Ideal Open Plan School, teachers rated each item on a seven point scale as a good or poor description of their school. The items included three about students, three about teachers, two about principals and four about the building. Secondly, the Canter Environmental Assessment consisted of 10 pairs of bipolar adjectives (e.g. adequate-inadequate). Teachers rated the school building as a whole, the area in which they spent most of their time, and the library on a seven point scale for each pair of descriptive adjectives. Thirdly, the 30 item Dimensions of Schooling Questionnaire (DISC) measured program openness. The first six items applied to the total program of the school and the remaining 24 to a specific subject. Teachers were asked to respond to each item in terms of what they perceived to be actually happening in their school or classroom situation. The items were ranked according to the frequency of occurrence in the teacher's classroom. Teachers were instructed not to rank items which did not apply to their own situations. The final section consisted of two open-ended questions.

All the instruments are reproduced in the Appendix together with response frequencies.[2]

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[1] E5 also included a questionnaire for neighbours and parents, and an Observation Schedule.

[2] Student Questionnaire is Appendix I, p. 195-204; Teacher Questionnaire is Appendix III, p. 207-243.

2. Data Collection

During February and March, 1973, semi-structured interviews were held with the 23 principals of SEF schools. Information about the neighbourhood, enrolment, staffing, program, and changes in the school building was collected. The purposes and thrust of the study were discussed and a schedule established for the administration of the questionnaires.

The questionnaires were pretested with 20 teachers and 55 students in one K-6 school. As a result, minor changes were made in the wording of questions, and some response categories were changed. One concern was that the teachers' questionnaire would be too long; teachers were asked to time each section. The variation in amount of time required by individual teachers to complete the questionnaire was from 30 minutes to 75 minutes, with the average being 45 minutes.

The revised questionnaires were administered by three members of the SEF staff in the 22 schools between March and May of 1973.

3. Dissemination of Results to Schools

Each school received the overall results for all 22 schools, and for each level (K-6 and 7-9) for every variable, as well as tabulated results for their own school. These data made it possible for them to compare the results from their school with the total sample, and with the average of other schools at their level. Two explanatory sheets were provided with the tabular summaries. In addition, the actual answers to the open-ended questions from both students and teachers were sent to all schools.

4. Analysis

The answers to all questions were manually coded onto large code sheets, and then checked. The data were keypunched at York University Survey Research. The first decks of student cards were manually checked back against the code sheets and no errors were found.

Programs from the Statistical Package for the Social Sciences (SPSS) were used to produce frequency distributions. After combining some categories, dropping "no responses" and developing several scales, an extensive series of two-variable tables (cross tabulations) were prepared.

Several statistical measures were available in the SPSS programs. The two used for most of our interpretation were the Chi-square and the related Contingency Coefficient which indicate whether the pattern of results was other than random. For our purposes, any distributions which were likely to occur by chance alone more than five times in a hundred (.05) were considered non-significant.

The scoring of DISC was done at OISE where the technique was developed. As the items were of varying length, different weightings were applied to each answer. The questionnaire relied on teachers' perceptions of the school and the programs of instruction. The scoring method yields scores that range between 0 and 1, the higher the score, the more open the program. Based on a mean score, teachers' scores were dichotomized into a high or low DISC score. DISC scores were cross-tabulated against both teacher and student variables.

In some schools teachers agreed about the kind of program being conducted in their school; in other schools there was a wide discrepancy in how the teachers saw the program. The DISC consensus score[1] for each school measures this variance. The relationship between this DISC consensus measure and other teacher variables was investigated.

The open-ended questions for teachers on concerns about working in open plan, and advice to teachers going into open plan for the first time were coded into four general categories: students, teachers, program and environment. The students' responses to the question, "What would you tell a visitor about your open plan school?" were classified according to 19 possible categories.[2] In each case the reference was rated as positive, negative or mixed. If the coder could not determine whether the response was positive or negative, it was coded "neutral".

The analyses of the Ideal Open Plan School (IOP) and the Canter Environmental Assessment data was done by the Survey Research Centre of York University. The program which was used (RAVE) operates as a covariance matrix and analyzes every possible subscale. It does not automatically discard items as does Item Analysis. There was no need to remove any items either from the IOP or the Canter Scale as all items were substantially single factors.

The overall Canter Environmental Assessment Scale had three highly reliable scales: Teaching Area Scale, School Building Scale, and Library Scale.

The teachers' scores on the IOP Scale and the three scores of the Canter Scale were cross tabulated with all variables.

5. Sample

A complete description of the sample of schools, teachers, and students is provided in Chapter 3.

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1. See glossary for details on DISC consensus score.

2. The detailed coding instructions are included in Appendix II. p. 205-206. and Appendix IV. p. 244-247.

CHAPTER 3

DESCRIPTION OF SAMPLE

Throughout the report percentages are used. Wherever numbers are not given, it may be assumed that the percentages are within 10 of total sample or sub-sample. For example, wherever the number of K-6 students fell below 567, or the number of 7-9 students fell below 392, or the total number of students fell below 969, the number (N) as well as percentages are given. Where there were major differences between levels, the findings for K-6 schools and 7-9 schools are presented separately. Similarly, where there were significant differences between 7-9 teachers who worked in open areas and 7-9 teachers who worked in enclosed areas, the findings are displayed separately. Where the differences between the two levels were slight, the overall findings are discussed.

1. Sample Size

The distribution of the sample by grade level is shown in Table 1.

Table 1: Distribution Of Sample By Schools, Teachers And Students

	K-6	7-9	Total
# of Schools	15	7	22
# of Teachers	340	195	535
# of Students	577	402	979

2. Students

The total student population in SEF schools in February-March 1973 was 13,383. From junior kindergarten to grade 6, the student enrolment was 9,367, and in the senior public and junior high schools the enrolment was 4,016.

The enrolment in individual schools varied from 199 to 991. The student sample consisted of fifty per cent of all grade 5's (N = 577) from the K-6 schools (with the exception of one small school from which all 19 grade 5 students were drawn), and twenty-five per cent of all grade 8 students from the 7-9 schools (N = 402). The number of students surveyed from each school was determined in proportion to the school size. Approximately six per cent of the total K-6 enrolment and approximately ten per cent of the 7-9 enrolment in SEF schools were included in the sample.

3. Teachers

Size of staff varied from 9 to 43. All teachers and principals in the SEF schools were asked to participate in the study. From a total staff of 586, questionnaires from 535 teachers and principals were collected, paraprofessionals being excluded.

a. Distribution of Staff by Position: Subject teachers made up the largest proportion at both levels. One principal and one librarian did not answer the questionnaire.

Table 2: Distribution Of Staff By Position

Position in School	# Overall	# K-6	# 7-9
Principal	21	15	6
Vice-principal	10	6	4
Guidance	4	2	2
Chairman	41	7	34
Librarian	21	15	6
Subject Teacher	360	227	133
Kindergarten Teacher	45	45	0
Special Teacher	29	19	10
Not stated	4	4	
N	(535)	(340)	(195)

4. Schools

All the variables used to describe the schools are summarized in Table 10, p. 13.

a. Description of Schools by Board

Table 3: Distribution Of Sample By Board

	LEVEL								
	All			K-6			7-9		
Area Board	Schools	Teachers	Students	Schools	Teachers	Students	Schools	Teachers	Students
East York	1	34	62	1	34	62	-	-	-
Etobicoke	2*	37	56	2*	37	56	-	-	-
North York	6	139	267	3	46	89	3	93	178
Scarborough	7	139	290	4	72	130	3**	67	160
Toronto	3	84	122	3	84	122	-	-	-
York	3	102	182	2	67	118	1**	35	64
N	22	535	979	15	340	577	7	195	402

* K-5 only ** Grades 7-8 only

While there were K-6 SEF schools in all boards, only North York, Scarborough and York had intermediate schools. The Etobicoke K-5 schools have been grouped with the K-6 schools throughout this study.

b. Description of Sample by Year of Opening: The schools were in their first, second and third year of operation.

Table 4: Distribution Of Sample By Year Of Opening

	LEVEL								
	All			K-6			7-9		
Year Of Opening	Schools	Teachers	Students	Schools	Teachers	Students	Schools	Teachers	Students
1970	10	228	388	9	203	323	1	25	65
1971	8	193	378	2	23	41	6	170	337
1972	4	114	213	4	114	213	-	-	-
N	22	535	979	15	340	577	7	195	402

All but one of the schools which opened in 1970 and all the 1972 schools were K-6. Analysis by number of years in operation was done only for K-6 level because six out of the seven 7-9 schools had been operating the same length of time (2 years). The schools at each level were diverse on most other characteristics.

c. Description of Schools by Enrolment: Enrolment in SEF schools varied from 199 to 991.

Table 5: Distribution Of Sample By Enrolment

	LEVEL								
	All			K-6			7-9		
Size of Enrolment	Schools	Teachers	Students	Schools	Teachers	Students	Schools	Teachers	Students
Small (199-509)	8	137	283	5	70	123	3	67	160
Medium (547-666)	8	202	357	5	109	179	3	93	178
Large (717-991)	6	196	339	5	161	275	1	35	64
N	22	535	979	15	340	577	7	195	402

None of the small schools opened in 1970. The small and medium schools varied with regard to level, rate of growth, rate of occupancy and district income.

All the large schools were in lower income districts and half were inner city schools. Five of the six large schools were K-6 replacement schools. Large schools did not exhibit rapid growth rates but varied as to rate of occupancy.

d. Description of Schools by Rate of Growth in Enrolment: Several principals mentioned in the interviews that the rate of growth affected program and staffing. Examination of enrolments over a two to three year period, made it obvious that some schools had expanded at an exceedingly fast pace. In one school the initial enrolment grew by sixfold within a year. In another the enrolment tripled.[1] In two other schools the enrolment doubled and a fifth school's enrolment grew by more than a third within a year. Four other schools with moderate growth were grouped with the schools which exhibited stable or slightly diminished enrolments.

Table 6: Distribution Of Sample By Rate Of Growth in Enrolment

	LEVEL								
	All			K-6			7-9		
Rate of Growth	Schools	Teachers	Students	Schools	Teachers	Students	Schools	Teachers	Students
Very Fast	5	112	206	3	53	98	2	59	108
All Others	17	423	773	12	287	479	5	136	294
N	22	535	979	15	340	577	7	195	402

At the time of the study, none of the five fast growth schools had reached their rated capacity, in fact three were still 30-70 per cent below rated capacity. They represented a wide range of income levels.

e. Description of Sample by Rate of School Occupancy: The rate of occupancy of each school was determined by calculating the enrolment as a percentage of the rated capacity. Two schools had portables; in several K-6 schools the number of junior kindergarten and kindergarten students exceeded design capacity.

The schools were classified as: (1) high occupancy - within 12% of capacity; (2) medium occupancy - 15-22% below capacity; and (3) low occupancy - 30-70% below capacity.

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[1] This school also experienced a change of feeder schools and grade levels.

Table 7: Distribution Of Sample By Rate Of Occupancy

	LEVEL								
	All			K-6			7-9		
Rate of Occupancy	Schools	Teachers	Students	Schools	Teachers	Students	Schools	Teachers	Students
High (within 12%)	8	222	414	4	109	180	4	113	234
Medium (15-22% below)	6	172	331	4	114	213	2	58	118
Low (30-70% below)	8	141	234	7	117	184	1	24	50
N	22	535	979	15	340	577	7	195	402

The eight high occupancy schools varied in grade level, and district income. Two were replacement schools. None displayed fast growth. None of the 1972 schools had reached their rated capacity.

The six schools which were 15-22% below rated capacity had opened in 1971 or 1972. Three were replacement schools, five were in lower income districts and two had experienced fast growth. They varied with respect to grade level and size.

All of the eight low occupancy schools had opened in 1970 and 1971. None were large; one was a replacement. They were predominantly K-6 level schools and three had experienced fast growth. The group varied on district income.

f. Description of Sample by Type of School (New or Replacement): The schools were located in suburban developments except for six of the K-6 schools which were built as replacements for existing schools.

Table 8: Distribution Of Sample By Type Of School (New Or Replacement)

	LEVEL								
	All			K-6			7-9		
Type Of School	Schools	Teachers	Students	Schools	Teachers	Students	Schools	Teachers	Students
Replacement	6	185	302	6	185	302	-	-	-
New	16	350	677	9	155	275	7	195	402
N	22	535	979	15	340	577	7	195	402

None of the replacement schools was small. None was subject to rapid growth; their enrolment was relatively stable. All six were in lower income areas. Three were inner city schools.

Table 9

Description Of Schools - Summary Of Variables

VARIABLE	SCHOOLS BY CODE NUMBER 1	2	3	4	5	6	7	8	9	10[1]	11	12	13	14	15	16	17	18	19	20	21	22	23	TOTALS K-6	7-9
1. Level:																									
K-6	X	X	X	X	X			X						X	X	X		X	X	X	X	X	X	15	-
7-9						X	X		X		X	X	X				X							-	7
2. Year of Opening:																									
1970														X	X	X	X	X	X	X	X	X	X	9	1
1971					X	X	X	X	X		X	X	X											2	6
1972	X	X	X	X																				4	0
3. Type of School:																									
Replacement		X	X	X														X	X				X	6	0
New	X				X	X	X	X	X		X	X	X	X	X	X	X			X	X	X		9	7
4. Size:																									
Small					X		X	X	X			X		X		X				X				5	3
Medium	X										X		X		X		X		X		X	X		5	3
Large		X	X	X		X												X					X	5	1
5. Growth:																									
Fast	X				X				X		X									X				3	2
Other		X	X	X		X	X	X				X	X	X	X	X	X	X	X		X	X	X	12	5
6. Occupancy Rate:																									
Within 12%						X						X	X		X		X	X				X	X	4	4
15-22% Below	X	X	X	X			X				X													4	2
30-70% Below					X			X	X					X		X			X	X	X			7	1
7. Socio-Economic Status:																									
Lower		X	X	X	X	X	X	X			X				X			X	X		X		X	10	3
Higher	X								X			X	X	X		X	X			X		X		5	4

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[1] Pretest School.

g. Description of Sample by Socioeconomic Status (SES): Very detailed socioeconomic information was available from the 1971 census. Average income of a school district was found to be co-related highly with the percentage of families with an income below $10,000 (.95), educational level (.84), percentage unemployment (.74), percentage of vacation homes owned (.73), and density (percentage of families with more than 1.1 persons per room) (.85). Thus average income was accepted as a satisfactory index of socioeconomic status and is used as such throughout this report.

The 396 K-6 Metropolitan Toronto schools were ranked from 1 to 396 on the basis of average income for each school district. On this ranking scale the K-6 SEF schools fell into two distinct groups: (1) low-middle income group with an income range from $7,797 to $11,932, and rankings from 30-243; and (2) a high income group with a range from $14,815 to $24,633 and rankings from 336 to 388.

In order to place the 7-9 schools into the ranking scale, the average income of all the feeder school districts was computed for each 7-9 school. There were no 7-9 schools below an average income of $11,055. Six of the seven schools fell into a middle range of income $11,055 to $14,392 and the remaining school drew students from the highest income brackets with an overall average income for the district of $28,975.

Table 10: Distribution Of Sample By Socioeconomic Status

	LEVEL								
	All			K-6			7-9		
Socioeconomic Status	Schools	Teachers	Students	Schools	Teachers	Students	Schools	Teachers	Students
Lower	13	341	587	10	248	405	3	93	182
Higher	9	194	392	5	92	172	4	102	220
N	22	535	979	15	340	577	7	195	402

Lower income school districts in this study had an average income of $10,480, while higher income districts had an average of $16,602. None of the schools in higher income districts were large. No relationships were noted between district income and most other characteristics - grade level, year of opening, or rate of occupancy. However, all six replacement schools were in low income districts. In fact, these schools constitute a special case because they were located in the lowest income districts in the sample.

IN SUMMARY, the major school variables are level (K-6 or 7-9), year of opening (1970, 1971, 1972), size, rate of growth, occupancy rates, type (new or replacement), and socioeconomic status. The relationship between each of these school variables and the teacher and student data is discussed in Chapter 10.

CHAPTER 4

SUMMARY OF FINDINGS

This chapter is a summary of the findings, organized into coherent packages. The raw distribution of responses (omitting non-responses) to each question by students and teachers is presented in Appendix I and III.[1] The organization of the appendix follows that of the questionnaires which were designed for the convenience of the respondents. The items and sections have been rearranged in this chapter in a somewhat more logical sequence. However, readers who wish to read this summary chapter while referring to the raw data in the appendix should have little difficulty relating the two. This chapter is based on basic frequency data question by question. The relationships between various questions and patterns of responses are treated in some detail in subsequent chapters.

STUDENTS

Biographical Characteristics

Biographical data on the students included sex, age, birthplace, first language spoken, and number of schools attended.

1. Sex And Age of Students

The student sample was almost equally represented by both sexes at both school levels.

The student sample included only grade 5 and grade 8 students, and the age range reflects this. Almost 3 in 5 of the K-6 sample were ten years or younger. The vast majority of 7-9 students were 13 years or older. As the age of the students corresponded so closely to their grade level, no additional age related results are presented in this report.

2. Grade Level

Grade 5 students comprised 58.5% of the total sample of students while the remaining 40.4% were from grade 8. These grades were used as the sample for their respective levels. The results are reported for both grade levels with every table throughout the report.

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[1] Appendix I, p. 195-204.
Appendix III, p. 207-243.

3. Ethnicity

Over three-quarters of all students were born in Canada. Three-quarters also reported English as their mother tongue and this finding held at both levels.

Table 11: Distribution Of Students By Birthplace

Birthplace	% Overall	% K-6	% 7-9
Canada	76.9	75.9	80.8
Other	21.8	24.1	19.2
N	(966)	(565)	(401)

Table 12: Distribution Of Students By Mother Tongue

Mother Tongue	% Overall	% K-6	% 7-9
English	74.5	76.8	77.4
Other	22.2	23.2	22.6
N	(946)	(557)	(389)

The answers from the questions concerning students' birthplace and mother tongue were combined to form the four categories of the Ethnic Scale.

Table 13: Distribution Of Students By Ethnic Scale

	% Overall	% K-6	% 7-9
Born in Canada -			
English first language spoken	65.0	63.4	67.4
English not first language spoken	13.0	12.6	13.6
Born outside of Canada -			
English first language spoken	12.2	13.7	10.0
English not first language spoken	9.7	10.3	9.0
N	(935)	(546)	(389)

In the schools which opened in 1972 the percentage of Canadian-born students with English as their mother tongue dropped to less than 1 in 5. All four of these schools were K-6 schools. Three of them were large schools in lower income districts, one of which was classified as inner city at the time of the study.

4. Number Of Schools Attended By Students

Because mobility has been significant in other studies, information was collected about the number of schools students had attended.

Table 14: Distribution Of Students By Number Of Schools Attended

Number of Schools Attended	% Overall	% K-6	% 7-9
1 or 2 schools	40.7	51.7	25.5
3 to 4 schools	36.1	31.3	43.3
5 or more schools	22.8	17.0	31.3

Compared to K-6 students, 7-9 students had more experience in a number of schools. Nearly one-third had been in five or more schools, and another 2 in 5 in three to four schools. Slightly more than half the K-6 students had attended only one or two schools; nearly a third had attended three to four schools. Canadian born students at both levels were more likely to have attended only 1 or 2 schools.

IN SUMMARY, the student sample was almost equally represented by both sexes at both school levels. Over three-quarters were born in Canada, and reported English to be their mother tongue. Predictably, the 7-9 students had more experience in a number of schools.

Three variables: sex, ethnicity and the number of schools attended, will be discussed further in the report in conjunction with the items to which they were significantly related. Chapter 10 contains a summary of significant sex differences.

Affective Characteristics

The basic aspects of the students' situation were investigated by asking whether they liked going to school, whether they liked working in open areas, how often they were bored in school, and their perceived level of freedom. The responses to these questions are presented here. Some patterns of response which were discovered to be related to other student characteristics are also noted.

1. Like Going To School

"I think the school is good because I like it."	"My school is nice and I like it and I think it is better going to school than not going."
K-6 Student	7-9 Student

Table 15: Distribution Of Students By Percentage Who Reported That They Liked Going to School

Like Going To School	% Overall	% K-6	% 7-9
All of the time	29.4	35.8	20.4
Most of the time	33.0	24.9	44.8
Sometimes	26.1	25.9	26.6
Never	11.2	13.4	8.2

More than 3 in 5 students reported they generally liked going to school, more than a third of the K-6 and a fifth of 7-9 students said they liked going "all the time". A higher proportion of K-6 students claimed to never like school.

2. Like Working In Open Areas

> "I like it and it is very cheery and bright. I like open complex so you don't get bored and you can see and/or hear other classes. You get to work in different areas and classes."
>
> "I just moved here, and I love it more than any school I've been to. I would tell them it isn't boring, lots of fun, enjoyment, the open area is just great."
>
> 7-9 Students

Table 16: Distribution Of Students By Percentage Who Reported That They Liked Working In Open Areas

Like Working In Open Areas	% Overall	% K-6	% 7-9
All of the time	32.0	33.9	29.4
Most of the time	25.4	19.7	33.8
Sometimes	29.4	30.6	28.6
Never	12.7	15.8	8.2

Students were almost equally positive about liking school and open areas. More than half the students liked working in open areas all or most of the time; 7-9 students were more likely to report positively (63% vs 54%). Twice the proportion of K-6 students compared to 7-9 students were negative about working in open areas (16% vs 8%).

> "This school is a lot better than the old school I went to in Texas, the school in Texas had no open areas. This school could be a little bigger. It has a better resource centre than the old school. This school you can talk in class and help each other. It's a pretty good school."
>
> K-6 Student

K-6 students with more experience in a variety of situations were more favourable than other K-6 students about working in open areas. As the number of schools attended increased, so did the proportion of K-6 students who said they liked working in open areas all the time.

3. Bored In School

Table 17: Distribution Of Students By Frequency Of Being Bored In School

Frequency	% Overall	% K-6	% 7-9
All of the time	6.8	7.4	6.3
Most of the time	13.6	13.3	14.3
Sometimes	56.3	49.7	66.8
Never	22.5	29.6	12.8

Only a small proportion of all students were bored all the time while most students were bored at least sometimes. The number of students who were never bored differed considerably between K-6 (30%) and 7-9 (13%). The similar proportion reporting being bored all the time (7.4% and 6.3%) at both levels suggests that more students do not "turn-off" with extended schooling.

4. Perceived Freedom

> "(I would tell a visitor)...About how open its areas are and how easy it is on your mind, and the easiness feeling."
>
> "It is very free and relaxed ... You can get a choice of what you want most of the time."
>
> "The school helps you feel more free and have more responsibility. Most teachers are friendly and willing to help you."
>
> "Whenever you are going out of the area you have to always tell someone and you can never really go to a corner and read without a teacher getting mad. There should be more free time and more independence. This isn't a prison."
>
> K-6 Students

Three questions were asked to assess the students' perceptions of the amount of freedom they had in school. These were: how often they got their own way in school, how often they had free time in school, and how often they helped to make rules in school.

Table 18: Distribution Of Students By Frequency Of Perception Of Getting Their Own Way In School

Frequency	% Overall	% K-6	% 7-9
All the time	1.0	1.0	1.0
Most of the time	13.4	11.9	15.9
Sometimes	56.1	53.9	60.5
Never	28.6	33.2	22.7

Despite some of the criticism of open plan schools that students "do their own thing", excess freedom is not a characteristic of SEF schools; only 14.4% of all the students reported getting their own way "all or most of the time". A certain amount of freedom is evident as over half reported that they "sometimes" had their own way in school.

There were differences in the amount of perceived freedom at the two school levels; 33% of the K-6 students reported that they "never" got their own way compared to 22% of the 7-9 students.

> "(My major concern is) ... that the limits of freedom are well defined and understood by the students and that they are willing to accept the extra load of responsibility this system requires of them."
>
> "Provide guidelines within which students know how free or restricted they are."
>
> "Open plan does not mean free school. Greater planning is required to utilize the open areas. Team work amongst teachers is a must. You must be confident in your abilities because you are constantly working with fellow teachers and being observed by them. A primary goal in teaching open plan is to encourage co-operation and respect amongst pupils, without this any program will fail.
>
> K-6 Teachers

Table 19: Distribution Of Students By Frequency Of Perceived Free Time In School

Frequency	% Overall	% K-6	% 7-9
Never	14.8	8.1	24.9
Less than once a week	30.0	28.4	33.2
1 - 2 times a week	30.8	32.5	29.5
3 - 4 times a week	13.3	16.8	8.6
5 or more times a week	9.8	14.2	3.8

No attempt was made to define the kind of free time, or the actual length of free time. The question was designed to elicit from students their perceptions of frequency of free time. Most students indicated that they had some free time in school but compared to 7-9 level students, K-6 students reported that their free time occurred much more frequently. Three times as many 7-9 students as K-6 students said they "never" had free time in school (25% vs 8%).

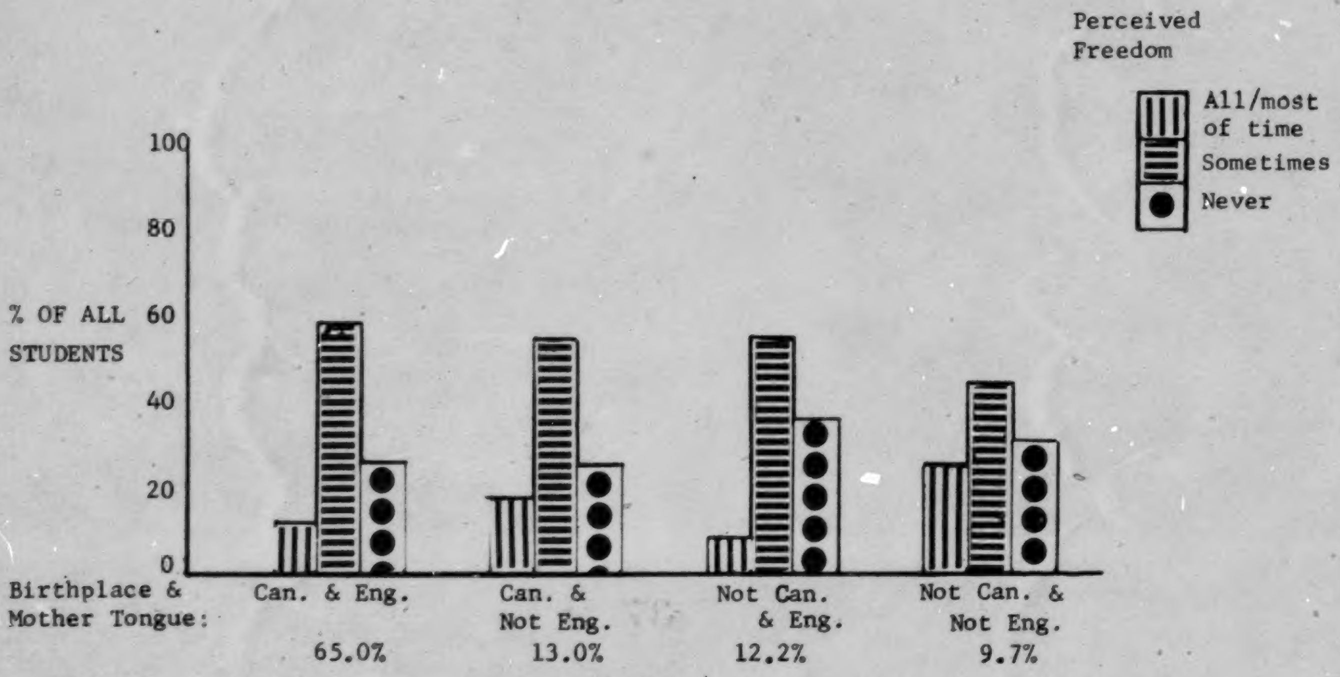
Table 20: Distribution Of Students By Frequency Of Helping To Make Rules

Number of Times	% Overall	% K-6	% 7-9
Never	69.4	65.0	76.5
Once this year	18.2	21.6	13.5
2 or more times this year	11.9	13.4	10.0

Students at both levels were not greatly involved in making rules at SEF schools. Two-thirds of the students at the K-6 level and three-quarters at the 7-9 level "never" helped to make rules. And of those students who had participated in rule making, most reported that it had occurred only once during the year. Girls had participated in rule making to a somewhat greater extent than boys.

Students' perceptions of freedom were related to differences in their backgrounds. Students whose mother tongue was not English reported in a higher proportion than other students that they got their own way "all or most of the time." The trend was stronger for foreign-born: more than one-quarter of students who were not born in Canada and whose first language was other than English said they got their way "all or most of the time". This may well reflect differences in home situations which lead to different perceptions of a standard of discipline in the school. See Chart 1.

CHART 1: Distribution Of All Students By Ethnic Scale (Place Of Birth And First Language Spoken) AND Perceived Amount Of Freedom



IN SUMMARY, the majority of students liked going to school, liked working in open areas, were occasionally bored and sometimes got their own way. Participation in rule making was minimal. Differences in such background characteristics as sex, number of schools attended, place of birth, and first language spoken were related to some of these affective characteristics.

The following summary of student data completes this overview. The unorthodox form of this summary was made necessary by the range of topics and the necessity for distinguishing between levels. Readers are reminded that detailed data is contained in Appendix I[1] for all questions.

Table 21:

Summary Of Student Data

Variable	At Both Levels	K-6 Only	7-9 Only	Findings
		Biographical characteristics		
Sex	X			Equally represented.
Ethnicity	X			Three-quarters born in Canada and reported English as mother tongue
No. of schools Attended			X	More likely to have attended more schools than K-6 students
Liked Going to School	X			Majority liked going to school
Liked Working in Open Areas	X			Majority liked working in open areas
Bored in school	X			Majority occasionally bored
Get own way	X			Majority "sometimes" got own way in school
Rule-Making	X			Participation by students was minimal
Free time		X		Reported more free time
		Working Conditions in SEF Schools		
Crowdedness		X		69% never found it too crowded
			X	50% never found it too crowded
Privacy		X		34% of teachers and students reported sufficient privacy for students all/most of the time
			X	44% of teachers and students reported sufficient privacy for students all/most of the time
Noise	X			A problem at least sometimes
		X		More of a problem than at 7-9 level
	X			Movement less of a problem than talking, fooling or noise in general
	X			Source of noise made a difference; talking, movement and general noise originating from other classes bothered more students
	X			Fooling bothered more students if it originated in their own class

---

[1] See p. 195-204.

Variable	At Both Levels	K-6 Only	7-9 Only	Findings
Evaluation of Physical Environment				
Exterior Appearance		X		80% liked it
			X	50% liked it
Interior Appearance	X			About 90% liked it
Importance of Appearance		X		Nearly three-quarters said it was important
			X	64% said it was important
School Building	X			Large majority liked it. Nearly two-thirds liked it "a lot".
Lunchroom/ Cafeteria		X		67% liked it
			X	59% liked it
School	X			Students not nearly as dissatisfied as teachers
Atmosphere	X			Less than 10% said it was often too warm. Two-thirds said "sometimes" too warm
		X		3/5 said "never" too cold
			X	Over half said "sometimes" too cold
Furniture	X			Less than 10% disliked it
Coatracks/ Lockers	X			Two-thirds liked them
Social Environment				
Friendliness of students			X	72% reported other students friendly all/most of the time
		X		54% reported other students friendly all/most of the time
Helpfulness of Teachers		X		60% said teachers were helpful all the time
		X		27% said teachers were helpful most of the time
			X	25% said all the time
			X	44% said most of the time
Mutual Help	X			Students perceived that they gave help to other students more often than they received help
Contacts with Other Students (Work, Play & Visiting)	X			For at least one-third, interaction provided contacts with less than five students
			X	More extensive visiting than at K-6
Work Patterns	X			Whole class and independent work being widely used
		X		One third worked in small groups frequently
	X			Would like to do more work in small groups and on an independent basis. Would like to work much less frequently with whole class.
Own Workplace		X		More likely to have own desk and more likely to report it "important".

Variable	At Both Levels	K-6 Only	7-9 Only	Findings
Use of Physical Facilities				
Use of Seminar Rooms	X			1 in 5 never use them
		X		42% used them less than once a week
			X	55% used them less than once a week
Field Trips	X			More than a third went on 3 or more trips a year
			X	More likely to go on field trip than K-6
Rearranging Furniture	X			Students rearrange furniture less than teachers
	X			There was some involvement in moving furniture but minimal involvement in planning arrangement of furniture
AV use	X			1 in 5 reported frequent use of all media except TV
Films	X			More use of film than any other media
		X		Slightly more use than at 7-9 level. One-quarter viewed films 3 or more times a month
Slides/ Filmstrips	X			About half used them more than once a month, 18% 3 or more times a month
Audio		X		More use than at 7-9 level. 47% used them at least monthly
Television	X			Not being widely used
		X		67% watched television less than once a month
			X	93% watched television less than once a month
Like Library		X		94% liked it
			X	67% liked it
Visit Library with Class		X		61% reported once or more a week
			X	37% reported once or more a week
Visit Library Alone or in Small Groups	X			More likely to visit alone or in small groups than with class
	X			One-third went 3 or more times a week
		X		One-third went 1-2 times a week
			X	One-third went less than once a week

TEACHERS

Biographical Characteristics

Biographical data for teachers includes sex, age, education, teaching experience, as well as information about teachers' requests to teach in a particular school, or to teach a specific age group.

1. Sex Of Teachers

Table 22: Distribution Of Teachers By Sex

Teachers By Sex	% Overall	% K-6	% 7-9
Male	38.1	26.4	58.5
Female	61.9	73.6	41.5

Male teachers formed a larger group than female teachers at the 7-9 level, whereas, nearly three-quarters of the teachers at the K-6 level were female. The primary level (Junior kindergarten to grade 3) in particular had a larger proportion of female teachers; 78% of primary teachers were female compared to 67% of grade 4-6 teachers. There was considerable variation between schools on the ratio of males to females with some K-6 schools having a fifty-fifty ratio, and others having as high as ninety per cent females.

Some significant relationships between teachers' sex and other factors are noted in other sections of the report. A summary of significant differences by sex is presented on page 43.

2. Age Of Teachers

Table 23: Distribution Of Teachers By Age

Age Of Teachers	% Overall	% K-6	% 7-9
30 or younger	62.1	67.4	52.9
31 or older	37.9	32.5	47.2

The 7-9 teachers tended to be older than the K-6 teachers, close to half being 31 or older. All the principals and 70% of the Chairmen were over 30 at both levels, whereas approximately 20% of classroom teachers at the K-6 level and 35% of classroom teachers at the 7-9 level were over 30 years of age.

3. Formal Education Of Teachers

Table 24: Distribution Of Teachers By Years Of Formal Education Beyond The Secondary Level

Years of Post Secondary Education	% Overall	% K-6	% 7-9
3 or less	46.6	59.2	24.7
4 years	28.3	25.6	33.0
5 or more	25.1	15.2	42.3

As expected 7-9 level teachers had more post secondary education; 2 in 5 reported five or more years, whereas almost 3 in 5 of the K-6 teachers had three years or less. Many K-6 teachers in Ontario began their teaching careers before a university degree was required.

"I would suggest that the teacher who is entering open space for the first time, ask for a grade level with which she has had prior experience. In this way, she will spend less time planning major philosophical and subject-oriented planning and will be able to spend more time planning methods for the maximum uses of an open plan school."

"Since this is my first year of teaching my impression of the amount and type of organization needed in open space is influenced by my lack of experience. I have learned a great deal about principles of teaching because I can watch two experienced teachers dealing with the same problems at the same time."

K-6 Teachers

4. Teaching Experience

Data was collected on several aspects of teachers experience: number of years teaching experience, number of years experience in open areas, number of years in present school, and number of types of inservice training for open plan schools.

Table 25: Distribution Of Teachers By Years Of Teaching Experience

Number of Years	% Overall	% K-6	% 7-9
2 or less	19.9	21.2	17.5
3 - 5 years	27.8	28.9	25.8
6 - 10 years	26.3	27.4	24.2
11 or more years	26.1	22.4	32.5

The 7-9 teachers had more teaching experience than K-6 teachers with a third reporting 11 or more years, not a surprising finding in light of the relative age of the teachers reported above.

"Personally, teachers should have experience in a closed classroom before they progress to an open area. If there are problems in a closed area, there is a numerous increase when they go to an open area. Teachers need to have a similar philosophy to work together. They need to seek out help and not wait for someone to volunteer."

"A teacher should not teach in open space 'for the first time' but should serve some continual period (say 3 months) of apprenticeship. If this is impossible, then I would advise a teacher to work only in a school where he/she will be one of a team."

K-6 Teachers

Table 26: Distribution Of Teachers By Years Of Teaching Experience In Open Areas

Number of Years	% Overall	% K-6	% 7-9
None	23.5	22.8	24.9
1 or less	29.0	32.5	22.8
2 years	21.1	14.2	33.2
3 or more	26.4	30.5	19.2

More K-6 teachers had longer experience in open areas; close to a third reported 3 or more years. However, a third of the 7-9 teachers had 2 years experience. This merely reflects the fact that only one 7-9 SEF school had been operating for three years. Male teachers at this level had had more open area experience than female teachers.

Table 27: Distribution Of Teachers By Years of Experience In Present School

Number of Years	% Overall	% K-6	% 7-9
This year only	33.4	36.6	27.8
1 or less	34.0	23.9	51.5
2 years	21.0	24.5	14.9
3 or more	11.6	15.0	5.7

Because the 7-9 schools had been opened more recently and because 5 of the K-6 schools were replacements, the 7-9 teachers had much less experience in their schools. Two-fifths of the K-6 teachers reported 2 or more years experience in their schools. Six 7-9 schools were in their second year of operation, one its third; four K-6 schools were in first year, two in second, nine in third.

"Visit open space schools, take workshop courses and read up-to-date material about open plan."

"Visit open plan schools to get ideas on set-up of timetables, activities, furniture arrangement and use of space. Your own goals and objectives should be clearly established."

"To operate an open plan school requires more planning and cooperation than conventional type. It is important that this planning be done with care. There is insufficient training of teachers and personnel for open plan schools. Too often they are placed in schools and told to make it work and 'be innovative' or 'experiment'. There is too much change in today's schools."

K-6 Teachers

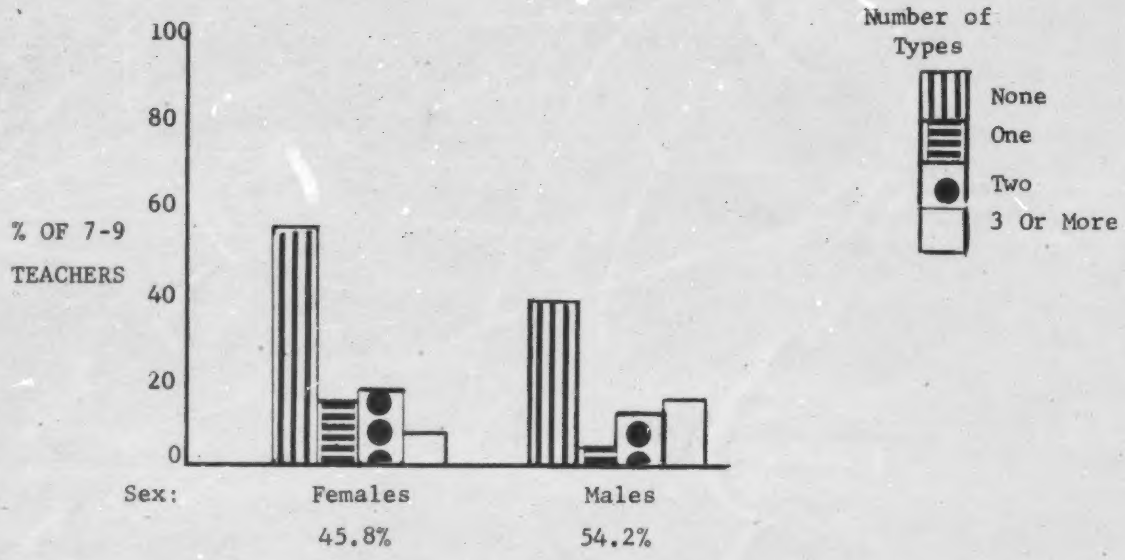
Table 28: Distribution Of Teachers By Number Of Types Of Inservice Training For Open Plan Schools

Number of Types of In Service Training	% Overall	% K-6	% 7-9
None	26.3	10.6	39.5
One	18.2	20.1	14.9
Two	29.5	33.4	22.6
3 or more	26.1	27.8	23.1

Types of inservice training included staff meetings, workshops, visits to other schools, special courses and systematic reading. More K-6 teachers than 7-9 teachers reported having more types of inservice training for teaching in open plan schools. Sixty per cent of K-6 teachers and 45% of 7-9 teachers had two types or more but almost 40% of the 7-9 teachers had no inservice training at all for open plan schools. This was true regardless of whether they worked in open areas or enclosed areas of the 7-9 schools.

Staff meetings and visits to other schools were the most common types of training; over three-quarters of all teachers reported such training. In addition, 2 in 5 reported that workshops were part of their training. At the 7-9 level more men than women reported some inservice training, and they also tended to have more types. See Chart 2.

CHART 2: Distribution Of 7-9 Teachers By Sex AND Number Of Types Of Inservice Training



An analysis of teacher background (years of formal education, years of teaching experience, and years of teaching experience in open plan schools) and the relationship to other variables was relatively unproductive. No further discussion of these factors is presented.

5. Teachers' Choice Of Assignment

> "Teachers need to be open minded in their teaching ways. They must have the desire to teach in this situation instead of being thrown into it."
>
> K-6 Teacher

> "These schools have been designed and put into use in our area without the active involvement of teaching staff, i.e., staff have been assigned to open area schools without requesting such placement and there has been a total lack of teacher training or even in-service to familiarize staff with the aims, objectives and techniques which should be used in open areas. Thus, teachers must either learn by experimenting or fall back on traditional techniques, effectively thwarting the aims of open concept schools.
>
> 7-9 Teacher

Table 29: Distribution Of Teachers By Percentage Who Asked To Teach In Their Schools

Teacher Request	% Overall	% K-6	% 7-9
Asked to teach in this school	49.2	38.8	67.2
Did not ask to teach in this school	50.8	61.2	32.8

The situation of teachers at each level is quite different; approximately two-thirds of 7-9 teachers, and a little more than one-third of K-6 teachers, had asked to teach in their schools. The significant relationships between teachers' choice of assignment and other factors is presented on pages 161-164.

In addition, teachers were asked if they had requested to teach the specific age group they were now teaching.

Table 30: Distribution Of Teachers By Percentage Who Asked To Teach Specific Age Group

Teacher Request	% Overall	% K-6	% 7-9
Asked to teach this age group	79.0	76.0	84.5
Did not ask to teach this age group	21.0	24.0	15.5
N	(457)	(296)	(161)

A large majority of teachers had asked to teach their current age group. This trend was even more pronounced at the 7-9 level.

IN SUMMARY, compared with K-6 teachers, the 7-9 teachers in this study had more formal education, more general teaching experience, less years experience in open areas, much less experience in their current school, and fewer types of inservice training for open plan schools. They were much more likely to have asked to teach in their schools, and slightly more likely to have asked to teach that specific age group.

There were also differences by sex at the 7-9 level. More men than women reported experience in extensive open areas and more men also reported several kinds of inservice training for open plan schools.

Affective Characteristics

Teachers were asked to:

(1) state their preferred teaching environment - open or enclosed classrooms,
(2) rate their own teaching style, and to assess how easy it was for them to integrate new methods or materials into their regular pattern of teaching,
(3) rate their school on the Ideal Open Plan School Scale (IOP)
(4) rate their school on Canter Environmental Assessment Scale
(5) rate their school on dimensions of schooling questionnaire (DISC)

1. Preference For Type Of Teaching Area

> "With present staff, I prefer open area. Otherwise I prefer closed classroom."
>
> "Forget the term 'open space school' as it has a different meaning to everyone and therefore usually becomes a useless term without a common meaning."
>
> "At first I was afraid that I would not get to work with and know personally many of the pupils but this in fact has turned out to be the opposite. After teaching in an enclosed classroom for two years, I was afraid that I may not have been as effective as I may have liked to have been in my teaching duties. I feel that I am contributing something worthwhile to this type of teaching. In fact I love this type of an educational development, both from a physical and human point of view."
>
> K-6 Teachers

Approximately one-fifth of both K-6 and 7-9 teachers reported that they had no preference for either an open or an enclosed area. However, there was a clear distinction between levels in their preferences for each type of space.

Table 31: Distribution Of Teachers By Preference For Type Of Space[1]

	LEVEL		
	K-6	7-9	
		Type of Space	
Preference	All	Open	Enclosed
No preference	16.7	16.9	21.1
Prefer enclosed teaching area	18.8	39.0	55.3
Prefer an open teaching area	33.3	15.6	5.3
Prefer both, alternating during day	31.2	28.6	18.4
N	(276)	(77)	(76)

While two-fifths of K-6 teachers preferred an enclosed teaching area, an equal proportion preferred either an open area or a combination of open and enclosed classrooms during the day. The largest proportion of 7-9 teachers preferred enclosed classrooms, and the preference was much stronger amongst those who worked in enclosed areas. Twenty-nine per cent of 7-9 teachers who worked in open areas opted for a combination of open and enclosed spaces, compared with 18% of those who worked in enclosed areas.

While the data are not directly comparable, it is interesting to note that 54% of K-6 students and 63% of 7-9 students stated that they liked working in open areas "all or most of the time."

The preferred choice of teachers for one type of teaching environment over another and the relationship between this and other variables in the study is analyzed in a separate section of the report. (see p. 156-160)

2. Innovativeness

Table 32: Distribution Of Teachers By Their Assessment Of Their Own Teaching Style

Assessment Of Teaching Style	% Overall	% K-6	% 7-9
Very progressive	9.3	7.8	12.0
Moderately progressive	61.5	63.2	58.5
Traditional	29.2	29.0	29.5
N	(517)	(334)	(183)

Table 33: Distribution Of Teachers By Their Assessment Of Ease Of Innovation

Ease Of Innovation	% Overall	% K-6	% 7-9
Very easy	34.7	31.1	40.8
Easy	38.1	40.7	33.5
Neutral/Difficult	27.2	28.1	25.7

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[1] Note that this table differs from preceding tables which showed overall percentages, and K-6 and 7-9 percentages. This format is used throughout the report to present significant differences between 7-9 teachers who worked in open areas and those who worked in enclosed areas.

At both levels, approximately 3 in 5 rated their teaching style as "moderately progressive"; more than a quarter assessed their style as "traditional".

Almost three-quarters of all teachers reported that it was either "easy" or "very easy" for them to integrate new methods or materials into their regular pattern of teaching. However, more 7-9 teachers than K-6 teachers stated it was "very easy" (41% vs 31%). Relatively few teachers indicated that they found innovation difficult.

An Innovativeness Scale was devised by combining the responses from the questions on teaching style and ease of innovation. The distribution of teachers on this scale yielded a larger proportion of 7-9 teachers in the high innovativeness category compared to K-6 teachers (38% vs 29%).

Table 34: Distribution Of Teachers By The Innovativeness Scale

Innovativeness	% Overall	% K-6	% 7-9	N
High	32.5	29.3	38.3	(166)
Medium	30.9	33.2	26.7	(158)
Low	36.6	37.5	35.0	(187)
N	(511)	(331)	(180)	(511)

This summary scale was analysed with all other teacher variables. These results are presented on pages 166-168.

3. Ideal Open Plan Scale (IOP)

There were three clusters of items - students, teachers, building - but the fourteen items in the scale were all highly interrelated. The distribution of results by level for each item are in Appendix III, p. 221. The overall median was equally appropriate for both levels. See Table 35.

Table 35: Distribution Of Teachers By Ideal Open Plan Scale

IOP Scale	% Overall	% K-6	% 7-9
Most ideal	50.7	49.1	53.3
Least ideal	49.3	50.9	46.6

Although there were no significant differences by years of education or years of teaching experience, there were differences by sex and age. A larger proportion of male and of older teachers at both levels rated the school "most ideal". This may reflect the fact that almost all the principals (93% of K-6, 100% of 7-9), a large proportion of vice-principals (67% of K-6, 75% of 7-9), and a majority of chairmen (59%), who were predominantly male, were also high on the IOP scale. Slightly more than half the classroom teachers at both levels were low on the scale; at 7-9 level English teachers (64%) and mathematics teachers (68%) in particular gave their school low ratings on IOP. Ironically 7-9 teachers (63%) in special facilities (mostly enclosed areas) were much more likely to rate the school high on the Ideal Open Plan Scale.

Teachers who requested assignment to their school, who preferred teaching in open plan and who were able to integrate new methods or materials easily were more likely to be high on the IOP Scale. Conversely, those teachers who rated their own teaching style as traditional were more likely to be low on the IOP Scale.

4. Canter Environmental Assessment

Teachers rated the school, their own teaching area, and the library on ten pairs of bi-polar adjectives[1] (e.g., stimulating - depressing). From these results three scales were developed - Building Scale, Teaching Area Scale and Library Scale. These were all highly interrelated with each other as well as with most of the individual items in the IOP (exceptions were the two IOP items concerning the principal, and the one concerning an integrated program). Each Scale was divided at the median score of all teachers into a positive score and a negative score.

While K-6 and 7-9 teachers were almost equally divided on each scale between positive and negative scores, large school by school differences appeared. For instance, on the Canter Teaching Area Scale there was a range from 23.5% to 93.3% in the proportion of teachers who had positive scores.

There were no age or sex differences on any of the scales. On both the Canter Building Scale and Teaching Area Scale, teachers with positive scores generally had had several years experience in open areas, preferred teaching in open space, and scored high on the Innovativeness Scale. In addition, 7-9 teachers in special facilities, especially art teachers and shop teachers, scored high on these scales. Only a minority of English and mathematic teachers had positive scores on the Building Scale and Teaching Area Scale (26% and 17% respectively).

Most English and mathematics teachers were teaching in the open areas of the school. Most social studies teachers who were also working in open areas did not differ significantly from the rest of the sample. No major relationships were noted between the Canter Library Scale and teacher characteristics.

5. Dimensions Of Schooling (DISC)

DISC was the major measurement of program openness. There were large school by school differences on most items of the questionnaire. The items were not analyzed individually but were weighted and scored as a single scale of program openness.

Teachers with high individual scores were operating classrooms which were more open and which had more student and teacher involvement in many aspects of the program.

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[1] The distribution of results for each pair is in Appendix III, p. 225-226.

Table 36: Distribution Of Teachers By DISC

	Mean Score - Average Of Answered Items	% Overall	N	% K-6	% 7-9
Least open	0.0	6.5	(31)	3.9	11.1
	0.10	2.5	(12)	0.3	6.4
	0.20	4.2	(20)	1.2	9.3
	0.30	9.8	(47)	9.4	10.5
	0.40	24.8	(119)	25.9	22.7
	0.50	17.9	(86)	26.2	2.9
	0.60	13.1	(63)	16.1	7.5
	0.70	9.8	(47)	9.0	11.1
	0.80	3.7	(18)	1.6	7.6
	0.90	2.1	(10)	1.6	2.9
Most open	1.00	5.6	(27)	4.6	7.5
N		(480)		(309)	(171)

There was a normal distribution of K-6 teachers with about 60% of the teachers in the upper half, the most open end of the scale. 7-9 Teachers were distributed erratically throughout the scale. Although there was a larger proportion of 7-9 teachers in the upper three deciles (18% compared to 8%), there was a smaller proportion in the upper half of the scale (60% vs 39%).

The erratic spread of the 7-9 teachers across the scale may account for the lack of teacher consensus about the type of program being conducted.

Table 37: Distribution Of Teachers By DISC Consensus

Consensus	% Teachers Overall	% Teachers K-6	Number of K-6 Schools	% Teachers 7-9	Number of 7-9 Schools
High	35.6	61.8	(7)	0.0	(0)
Medium	26.6	34.2	(7)	16.2	(1)
Low	37.8	4.0	(1)	83.8	(6)
Number of Teachers	(949)	(547)		(402)	

There were no 7-9 schools among the seven schools where there was high teacher agreement; six of the seven 7-9 schools fell into the low category of teacher consensus.

The relationships of DISC Consensus, teacher characteristics and teacher satisfaction are discussed on pages 164-165.

IN SUMMARY, one fifth of all teachers reported no preference for either open or enclosed areas. Among K-6 teachers, two in five preferred enclosed areas and an equal proportion preferred a combination of both open and enclosed spaces. The larger proportion of 7-9 teachers preferred enclosed classrooms. A majority of teachers at both levels rated their teaching style "moderately progressive" and a large proportion of teachers did not find it difficult to integrate new methods or materials into their regular pattern of teaching. The 7-9 teachers scored high on the Innovativeness Scale compared to K-6 teachers although a larger proportion preferred to work in enclosed classrooms.

Approximately half the teachers at both levels scored high on the Ideal Open Plan Scale, and on the Canter Environmental Assessment Scale. However, on DISC, K-6 teachers were much more likely to have high program openness scores and high teacher consensus about the extent of program openness in the school.

The following cryptic summary of teacher data completes this section. Readers who wish to examine the raw frequency data for particular questions are referred to Appendix III, p. 207-243.

Table 38:

Summary Of Teacher Data

Variable	At Both Levels	K-6 Only	7-9 Only	Findings
		Biographical Characteristics		
Formal Education			X	Had more formal education
Teaching Experience			X	More years experience
Experience in Open Areas		X		More years experience
Kinds of Inservice Training for Open Plan Schools		X		More likely to have more kinds of inservice training for open plan schools
Preference for Type of Space	X			One-fifth had no preference
		X		Two-fifths preferred open areas
		X		Two-fifths preferred a combination of open and enclosed areas, alternating during the day
			X	Larger proportion preferred enclosed areas
Teaching Style	X			Majority rated themselves "Moderately Progressive"
Ease of Integrating New Methods or Materials	X			Large proportion did not find it difficult
Innovativeness Scale			X	More likely to be high on scale

Variable	At Both Levels	K-6 Only	7-9 Only	Findings
Ideal Open Plan School		X		More likely to be high on scale
	X			Slightly more than half the classroom teachers low on scale
	X			Teachers who requested assignment, preferred open space, and easily integgrated new ways, were high on scale
	X			Teachers who rated themselves traditional tended to be low on scale
Canter Environmental Assessment	X			More likely to have positive scores if they had several years experience in open areas, preferred open space and were high on Innovativeness Scale
DISC		X		60% at more open end of Scale
			X	39% at more open end of Scale
DISC Consensus		X		High consensus about program
			X	Low consensus about program
				Working Conditions In SEF Schools
Class Size	X			26-35 students was most common
No. of Grade Levels Taught		X		Most taught one grade level
			X	Only a minority taught one grade level
No. of Subjects Taught		X		Three-quarters taught more than one subject
			X	More than half taught only one subject
Teaching Area		X		Most taught in non-specialized areas
			X	Half were in specialized areas
Size of Teaching Area		X		Over half reported area to be "equivalent size to one classroom"
			X	One-third reported areas to be "equivalent in size to three or more classrooms"
Enclosed Areas (four walls)		X		15% in enclosed areas
			X	Over half in enclosed areas
Roominess of Area	X			More than three-quarters rated it adequate or superior
		X		23% rated it inferior
			X	18% rated it inferior
Availability of Seminar Rooms	X			Over half reported one available "all or most of the time"
Access to Common Area	X			Layout makes common areas easily available to a majority of teachers
			X	More open area teachers had a common area adjoining their teaching area than any other set of teachers

Variable	At Both Levels	K-6 Only	7-9 Only	Findings
Supplementary Enclosed Space	X			Large proportion never had access to an enclosed classroom (38% of K-6) (29% of 7-9)
Extent of Privacy For teachers	X			Generally positive about amount of privacy
			X	54% had sufficient privacy all or most of the time
Noise	X			Only 13% of K-6 and 16% of 7-9 were never bothered by noise
Evaluation of Physical Environment				
Exterior Appearance		X		40% disliked it
			X	29% disliked it
Interior Appearance	X			Nearly 85% liked it
Windows	X			One-third liked them, two-fifths disliked them
			X	More enclosed area than open area teachers liked them
Importance of Windows	X			Important to a large majority. Half the teachers who did not have windows said they were very important
		X		Very important to more than half
School Layout	X			Majority rated it adequate, one-fifth judged it superior, one-quarter inferior
Location of Teaching Area	X			One-third rated it superior, one-fifth, inferior
Acoustics		X		One-fifth rated them inferior
			X	Two-fifths rated them inferior
			X	Nearly half of the open area teachers rated them inferior
Lighting	X			High satisfaction. Only 15% at the K-6 level and 6% at the 7-9 level rated it inferior
Atmosphere	X			More dissatisfaction than with any other environmental feature
		X		60% rated school atmosphere, and 55% rated area atmosphere inferior
			X	40% rated both school and area atmosphere inferior

Variable	At Both Levels	K-6 Only	7-9 Only	Findings
Furniture (overall)		X		54% satisfied, 33% dissatisfied
			X	39% satisfied, 47% dissatisfied
Furniture - Individual Items		X		Half to three-quarters rated most items adequate and sufficient regardless of type of furniture used
			X	Half to two-thirds rated most items adequate
Display and Storage Units	X			Two-fifths critical of sufficiency
			X	More open area than enclosed area teachers rated quality and sufficiency inferior
Coatracks/ Lockers		X		58% rated them inferior
			X	28% rated them inferior
Social Environment				
Family Grouping		X		14% reported older students working with younger all or most of the time, 54% said sometimes
			X	74% said "never"
Team Teaching	X			Large proportion worked on a team, half spent more than a quarter of their time with team
		X		Most teams did not have a leader
			X	Most teams did have a leader
	X			Varied sizes of teams
		X		Generally 2-3 persons on team
			X	Generally 2-3 persons on teams in enclosed areas and five or more persons more common in open areas
Planning	X			More time spent planning by selves than with others
	X			Only a minority did no joint planning
			X	Open area teachers did more planning than enclosed area teachers
Use of Physical Environment				
Teacher Preparation Room			X	More than half used it more than once a day
		X		41% used it less than once a week
Service Column		X		40% used it daily
			X	30% used it daily

Variable	At Both Levels	K-6 Only	7-9 Only	Findings
Rearranging Furniture	X			Tables rearranged more frequently than storage containers, storage containers more than shelves, shelves more than doors on casework. Doors on casework infrequently changed.
Folding Walls	X			Being used relatively infrequently
Use Library	X			One-quarter K-6 teachers, One-half enclosed area 7-9 teachers used library less than once a week. Remaining teachers made fairly intensive use of it.
			X	More open area teachers used it daily than enclosed area teachers

ADDITIONAL NOTEWORTHY RELATIONSHIPS

1. Principals

Fifteen principals at the K-6 level and six at the 7-9 level completed the questionnaire. Principals' responses did not generally differ from teachers, but those significant differences which were found are discussed in this section.

As a group a very large majority of principals were 31 years or older and all were males. As expected, they were much more likely to have more formal education and experience than teachers. At the 7-9 level, all the principals reported at least two types of inservice training for open plan teaching.

The principals tended to be more positive about the physical environment than were other teachers. The K-6 principals were very positive about their schools' overall adequacy and frequently rated the layout, acoustics and lighting as superior. Whereas most other respondents criticized the adequacy of the school atmosphere, the principals were more neutral.

At the 7-9 level the only item on which principals differed significantly from teachers was interior appearance which they rated very positively.

2. Grade 8 Teachers

Only 14 teachers out of 195 teachers in 7-9 schools did not work with grade 8 students. The results from this sub-sample were practically identical to those of the total sample.

3. Grade 5 Teachers

Approximately one-third of all K-6 staff worked with grade five, but only 18.5%

of grade 5 teachers worked with a single grade level. Librarians, chairmen, guidance counsellors, principals, vice-principals all "worked with grade 5" as well.

Taking all K-6 classroom teachers only (N = 225) more were male in grade 5 classes than in other K-6 classes (43% compared to 27%). A higher proportion of grade 5 teachers worked in enclosed classrooms compared to other K-6 teachers (26% vs 15.5%). However, they did not differ from the K-6 teachers in their preference for open or enclosed space.

Grade 5 classes tended to be larger as 19% of them had 36 or more students compared to 9% of all K-6 classes combined. In K-6 schools where teachers worked with teams, one in three of the grade 5 teachers worked on a large team of five persons or more, compared to one in four for all K-6 teachers.

Sub-samples of all the teachers who worked with grade 5 (N = 119), were examined against the 14 variables[1] which were similar or identical to student variables. Despite the differences noted above between grade 5 teachers and other K-6 teachers, on the 14 variables which were comparable with student variables, grade 5 teachers made significantly different responses on only two variables. They reported more frequent student use of seminar rooms and fewer class visits to the library.

Fifty-six per cent of grade 5 teachers compared with 44% of other K-6 teachers reported their students used seminar rooms at least once a week. Nineteen per cent of grade 5 teachers compared with 6% of other K-6 teachers reported their students never visited the library as a class.

As only minor differences were found between the grade 5 teachers and the other K-6 teachers, comparisons between responses from all teachers and students on these 14 variables are regarded as valid.

4. Primary Teachers

Whereas 35% of all K-6 teachers taught grade 5 (N = 119), 58% of all K-6 teachers taught primary (N = 197). In order to determine if primary teachers differed significantly from the rest of the K-6 teacher sample, the sub-sample of primary teachers was cross tabulated against all variables.

There was variation from school to school from a low of 48% to a high of 71% of primary teachers. There were a few program differences between the two sets of teachers, for example primary teachers were more likely than other K-6 teachers to be using family grouping at least at times (76% vs 58%). However, there were no significant differences in the evaluation of either the social or physical environment.

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[1] Variables are: satisfaction with exterior appearance, interior appearance and furniture, adequacy of coat racks or lockers, perceptions of frequency of student privacy, student use of seminar rooms, students' visits to library as a class, noisiness of teaching area, frequency of rearranging tables and storage containers, and frequency of student use of films, filmstrips, audio and television.

The findings underline the representativeness of the teacher samples for their respective levels.

5. A Comparison Of 7-9 Teachers Working In Open Areas And Enclosed Areas[1]

While the 7-9 teachers in both types of space tended to give similar answers, they did differ on some variables.

(i) Biographic: The teachers in open areas had had more experience in open area schools and had done more systematic reading about open plan schools. Forty per cent of the 7-9 teachers in open areas would prefer teaching in an enclosed area, compared to 55% of the teachers working in enclosed areas. Another quarter of the teachers in open areas would prefer a combination of open area and enclosed area teaching, alternating during the day.

(ii) Working Conditions: Teachers in open areas were least likely to have frequent access to seminar rooms or enclosed classrooms, but more likely to have access to common areas. They also tended to have larger classes, and to be on teams of five or more people, rather than on teams of 2-3 people (the most common size of teams from enclosed areas.) They reported their teaching areas to be too noisy more of the time. They spent many more hours planning, both by themselves and with others.

(iii) Evaluation of Physical Environment: Open area teachers were more generally dissatisfied with the furniture. But they differed significantly only on the quality and sufficiency of storage units, and the sufficiency of chairs and tables, to which they gave more inferior ratings.

They were less satisfied with the location of their area. Half of them, compared to a quarter of teachers working in enclosed areas, rated the acoustics of their area inferior. They gave school lighting both more superior and more inferior ratings than other 7-9 teachers.

(iv) Use of Physical Environment: Teachers in open areas were less likely to use folding walls. Their students were more likely to watch films in school and a larger proportion of their students used audio equipment. They were much more likely to use the library themselves and more likely to do so on a daily basis. Their students visited the library more frequently as well.

6. Comparisons Between K-6 and 7-9 Level

(i) Students: A higher proportion of K-6 than 7-9 students were satisfied with the library, the furniture and the feeling of spaciousness in their school. Relative to 7-9, the K-6 students were more likely to report that they were never bored, that their teachers were helpful, that they often worked in small groups, used AV equipment frequently and visited the library frequently with their class.

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[1] Because most K-6 teachers in SEF schools spent most of their day in the open area, this comparison could not be made at the K-6 level.

In contrast, proportionately more 7-9 than K-6 students reported that they liked working in open areas, that fellow students were friendly and that students frequently helped one another with their work. Seven to nine students were also more likely to report that they made field trips frequently and that they never had free time in school.

(ii) Teachers: The differences between levels were much more pronounced and extensive among teachers than among students.

K-6 teachers were more likely to be younger, to be female, to teach only one grade, and to teach in an area that was larger than one classroom in size. They were also more likely than 7-9 teachers to teach in more open teaching areas, to have more experience in open areas, to like the interior appearance of their school, to rate the acoustics as superior and the lighting as inferior. A higher proportion of K-6 teachers rated the school lighting, atmosphere and coatracks inferior, the furniture as satisfactory and claimed that neither students nor teachers had enough privacy. K-6 teachers were more likely than their 7-9 colleagues to have ready access to a common area, to have exclusively SEF furniture, to rate screens and display surfaces as inferior. Proportionately more of them disliked the windows, worked in 2 or 3 person teams, used family grouping and made more intensive use of all kinds of audiovisual materials in their teaching.

In comparison, 7-9 teachers were much more likely to have 5 or more years formal education beyond grade 12, to have 11 or more years teaching experience, to teach only one subject and to work in more specialized facilities. They were also more likely to have asked to teach in the school, to have no inservice training for open plan, to be positive about the exterior appearance, the atmosphere and the lighting in the school, and to make negative ratings of the acoustics both of the school and their teaching area. Moreover, a higher proportion of the 7-9 teachers rated the lighting and atmosphere of their teaching area as superior, preferred enclosed teaching areas, made daily visits to the library, and used the teacher preparation room on a daily basis, 7-9 teachers were more likely to have team leaders, access to an enclosed classroom, to have no windows in their teaching area, to use folding walls more frequently and to be critical of the quality of bookshelves and storage units and the sufficiency of both chairs and tables.

All of the forgoing relationships were statistically significant. Their magnitude can be inferred by examining the raw data presented in Appendix I and III, pages 195-204, and 207-243.

7. Sex Differences

a. Students:

(i) Biographic: Girls had participated in rule-making more often.

(ii) Physical Environment: Girls were more likely to be positive about interior appearance of the school and the lunchroom. They were also more likely to "never" find their school too warm or "sometimes" too cold.

(iii) Social Environment: Girls were more likely to be positive about the friendliness of other students and the helpfulness of the teachers. More girls reported helping other students frequently and playing with smaller groups of students on a daily basis. A smaller proportion of girls than boys felt it important to have their own desk or table.

(iv) Use of Physical Facilities: The boys were more likely to have moved furniture and shelves.

b. Teachers at the 7-9 Level:[1]

(i) Biographic: Male teachers were more likely than female to have more experience in open areas. More males had in-service training for open area teaching, and they also had more types of in-service training.

(ii) Working Conditions: More males than females were teaching in areas equivalent in size to one classroom.

(iii) Evaluation of Physical Environment: More men rated both the school lighting and area lighting "superior". Women were more likely to rate both the atmosphere of the school and area as "inferior".

(iv) Use of Physical Facilities: More women than men reported that their students never used seminar rooms. More men made more frequent use of the library; a third reported visiting the library on a daily basis, whereas half the female teachers said they used it "less than once a week". Male teachers reported more frequent use of filmstrips and slides by students and consequently males scored higher on the AV Use Scale.

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1. Because most teachers in K-6 schools were female no analysis by sex was done at this level.

CHAPTER 5

WORKING CONDITIONS IN SEF SCHOOLS

This chapter describes the physical working conditions in SEF schools in terms of:

(1) teaching load - number of students per teacher, number of grade levels taught, and number of subjects taught;

(2) teaching area - its size, openness and roominess, as perceived by teachers; its crowdedness as perceived by students;

(3) the availability of additional facilities - seminar rooms and enclosed classrooms, and the kind of access to common areas;

(4) extent of privacy as perceived by students and teachers; and

(5) noise as perceived by students and teachers.

Team teaching may also be considered a working condition. Data on the extent of team teaching, size of teaching teams and whether or not teams had leaders is presented in Chapter 7, p. 105-108.

1. Teaching Load

There is not much hard evidence on effects of class size.[1] A study done in Calgary[2] in 14 schools (83 teachers in five open area schools, 62 teachers in four quasi-open area schools and 67 teachers in five traditional plan schools) ranked impediments to achieving instructional objectives. In the open area schools the pupil-teacher ratio ranked third out of 12 impediments, compared to eight in the quasi-open and eleventh in the traditional plan schools.

Research at Teachers College, Columbia University, has indicated that there are "critical breakpoints between class sizes where sharp drops occur in the performance scores."[3] One of these points, between 25 and 26, was used in this study.

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1. Doris Ryan and T. Barr Greenfield, The Class Size Question: Development of Research Studies Related to the Effects of Class Size, Pupil/Adult and Pupil/Teacher Ratios, Ontario Ministry of Education, Grant-in-Aid of Educational Research, (Toronto: Ontario Ministry of Education, 1975) 342 p.
2. R.B. Carson, F.T. Johnson and F.D. Oliva, "The Open Area School: Facilitator for or Obstacle to Instructional Objectives," Journal of Education, 155, (February 1973): p. 18-30.
3. Martin N. Olson, "Ways to Achieve Quality in School Classrooms: Some Definitive Answers," Phi Delta Kappan, September 1971, p. 63-65.

Table 39: Distribution Of Teachers By Number Of Students Per Teacher in Teaching Area

	LEVEL		
	K-6	7-9	
		Type of Space	
Number Of Students	All	Open	Enclosed
25 or less	26.4	11.1	25.3
26 - 35	64.7	85.2	65.5
36 or more	8.9	3.7	9.2
N	(292)	(81)	(87)

A large proportion of teachers had classes of 26-35 students. A small minority of teachers (less than 10%) taught in areas where there were 36 or more students per teacher. More than a quarter of K-6 teachers and 7-9 teachers in enclosed areas reported classes of 25 or smaller.

"There are still some problems such as large classes, but these can be corrected in time."

7-9 Student

"Large numbers may prevent needed individualized attention. Large numbers preclude checking up on slow and lazy children as well as withdrawn, shy or problem children. Large numbers also make it difficult for a single teacher to adequately assess each child."

K-6 Teacher

An analysis of the data for teachers with smaller than average or larger than average classes was done. There were few significant relationships.

Teachers who reported class size of 25 or less were more likely to be teaching only one grade level, rate as superior more of the environmental features of their area, and to report frequent student use of audio equipment. The teachers who reported class sizes of 35 or more were more likely to be in very open areas (0-1 walls) and to have seminar rooms available most of the time.

K-6 teachers who reported class size of 36 or more tended to be in schools with fast growing enrolments, but where enrolments were 30 - 70% below rated capacity. They tended to rate the roominess inferior and to dislike the exterior appearance (see Chart 3). Teachers who reported large classes tended to be highly innovative; but they were more critical of the tables, both the quality and sufficiency.

CHART 3 : Distribution Of K-6 Teachers By Class Size AND Evaluation Of The Exterior School Appearance

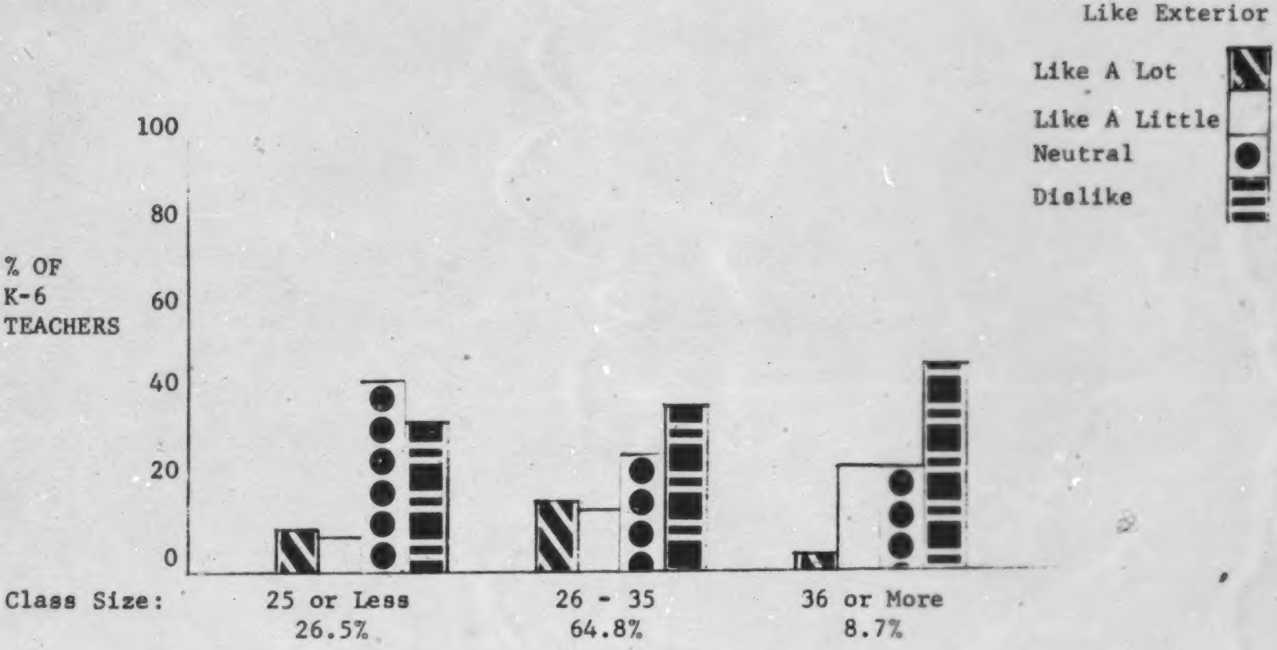

Table 40: Distribution Of Teachers By The Number Of Grade Levels Taught

Number of Grade Levels	% Overall	% K-6	% 7-9
Only one grade	44.9	64.9	10.3
More than one grade	55.1	35.1	89.7

Almost two-thirds of the K-6 teachers taught only one grade level indicating that there was not widespread use of "family grouping". However, there was a greater tendency for teachers to work with more than one grade at the primary level than at the 4-5-6 level (40% vs 29%).

At the 7-9 level, where there was more subject specialization, 9 out of 10 teachers taught more than one grade level.

Table 41: Distribution Of Teachers By The Number Of Subjects Taught

Number of Subjects	% Overall	% K-6	% 7-9
Only one	36.2	23.6	57.2
More than one	63.8	76.4	42.8

Most K-6 teachers are classroom teachers, teaching a broad array of subjects. At the 7-9 level more than half the teachers taught only one subject. However, 7-9 teachers in open areas were more likely to be teaching more than one subject than their more specialized colleagues in enclosed areas (58% vs 32%).

IN SUMMARY, class sizes of 26-35 were most frequent. K-6 teachers tended to be teaching a variety of subjects at only one grade level, whereas 7-9 teachers tended to be teaching more than one grade level in only one subject area.

2. Teaching Area

This section includes data on the size, openness and roominess of teaching areas as perceived by teachers, and its crowdedness as perceived by students.

Table 42: Distribution Of Teachers By The Area Where Most Of Their Teaching Day Was Spent

Teaching Area	% Overall	% K-6	% 7-9
Special Facilities*	15.5	2.6	37.8
Library	4.7	5.2	3.9
Seminar Room	4.5	2.9	7.2
Other teaching areas	75.3	89.4	51.1

*gym, shop, home economics, art, music and science room

Because subject specialization is not common until the 7-9 level, the vast majority (89%) of K-6 teachers are not working in special facilities. Approximately half the 7-9 teachers work in classroom teaching areas while the other half work in Special Facilities (including library and seminar rooms as well as the gym, shop, home economics, art, music and science rooms).

a. Size of Teaching Area: Many of the open areas as well as many of the enclosed specialized areas were larger than a single classroom.

Table 43: Distribution Of Teachers By The Size Of Their Teaching Area

Size of Teaching Area	% Overall	% K-6	% 7-9
One classroom	52.6	57.2	44.2
Two classrooms	20.7	19.9	22.1
3 - 4 classrooms	17.4	13.2	25.0
5 or more classrooms	9.3	9.6	8.7
N	(483)	(311)	(172)

More K-6 teachers than 7-9 teachers reported their areas to be equivalent in size to one regular classroom (57% vs 44%). One-third of the 7-9 teachers were in an area equivalent in size to three or more classrooms.

b. Openness of Teaching Area:

Table 44: Distribution Of Teachers By The Extent Of Physical Openness Of Their Teaching Area

Physical Openness Of Teaching Area	% Overall	% K-6	% 7-9
0 - 1 wall	24.1	31.9	9.9
2 walls	24.3	28.4	16.9
3 walls	23.0	24.2	20.9
4 walls	28.6	15.5	52.3
N	(482)	(310)	(172)

A much larger proportion of K-6 teachers than 7-9 teachers worked in open areas (85% vs 48%). Obviously this is an important distinction: most K-6 teachers had daily experience with open plan teaching, whereas, at the 7-9 level, over half the teachers worked in enclosed areas, even though they were working in schools designated as open plan.

The 7-9 schools varied greatly on the proportion of open space in the school: in one school only 23% of the teachers worked in open areas while in two schools 63% of the teachers worked in open areas. 60% of the 7-9 libraries were open space but only 13% of the special facilities (e.g., art, science, etc.) were open.

At the 7-9 level high proportions of subjects such as social studies (82%), English (70%), mathematics (67%), and science (52%) were being taught in open areas. Other subjects such as shop (100%), music (93%), art (83%), home economics (70%), French (62%) were being taught in enclosed areas.

Some significant differences between 7-9 teachers in open areas and those in enclosed areas are reported throughout in the report. It may be assumed that both groups of 7-9 teachers gave similar responses where no qualifications are noted.

> "It has barriers that divide the classes up."
>
> 7-9 Student

The extent of physical openness is a practical consideration: three walls provide quite a different environment than 0-1 wall. 71.4% of all teachers worked in teaching areas with fewer than four walls. The distribution of these by extent of openness is as follows:

Table 45: Distribution Of All Teachers Who Teach In Open Areas By Extent Of Openness

Extent Of Openness	% open area Overall	% open area K-6	% open area 7-9
0 - 1 wall	33.7	37.7	20.8
2 walls	34.0	33.6	35.4
3 walls	32.3	28.7	43.8
N	(344)	(262)	(82)

The teaching areas of K-6 teachers were generally more open than those of 7-9 teachers. More of them had 0 - 1 wall, approximately the same proportion at both levels had two walls, while fewer K-6 teachers had three walls (29% vs 44%). Yet a majority of K-6 teachers (57%) also stated their area was "equivalent in size to one regular classroom". Invisible walls must be present for those teachers who do not consider the whole open area to be their own teaching area.

c. Roominess: All the working conditions discussed thus far have been numerical reporting by teachers of actual conditions. The roominess of the teaching area is not discussed in terms of square feet but rather in terms of teachers' perceptions. Perceptions of the roominess of an individual teaching area may reflect its actual size, but it may depend as well on shape, furniture arrangement and teaching style.

> "Not enough floor space for required tables, i.e., students are back to back with those of another class. Not enough room for interest centres or independent work areas."
>
> K-6 Teacher

Table 46: Distribution Of Teachers By Evaluation Of Roominess Of Their Teaching Areas

Roominess	% Overall	% K-6	% 7-9
Superior	28.7	27.1	31.5
Adequate	49.9	49.5	50.5
Inferior	21.4	23.3	17.9
N	(501)	(317)	(184)

The teachers were generally satisfied with the roominess of their teaching area; three-quarters rated it "adequate" or "superior". A slightly higher proportion of K-6 teachers were critical, perhaps because more K-6 teachers than 7-9 teachers reported working in smaller teaching areas.

One item in the Ideal Open Plan School Scale was related to roominess. Teachers were asked whether "plenty of floor space" was a good or poor descriptor of their school. Sixty per cent of K-6 teachers and 74% of 7-9 teachers reported that plenty of floor space was a relatively good descriptor[1] of their school. The differences between levels was not statistically significant.

IN SUMMARY, most K-6 teachers worked in non-specialized open area facilities; more than half reported that their area was the size of one classroom. Half of the 7-9 teachers worked in special facilities; half in enclosed space; a third reported that their areas were the size of three or more classrooms. There was generally high satisfaction with the amount of space provided.

d. Students' Perception of Crowdedness:

"Our open plan school is well planned but not enough space or area."

"This is my school that is open planned. The best thing about it is that you can see what other classes are doing while you are doing your work. You don't feel like you are crowded in a box."

K-6 Students

"I would tell the visitor it is very big. Lots of room to move about in. Plenty of freedom. To me it is like a second home."

7-9 Student

Students were asked how often their school was too crowded for them.

Table 47: Distribution Of Students By Perceptions Of Crowdedness

Too Crowded	% Overall	% K-6	% 7-9
Often (all/most of the time)	8.8	8.3	9.8
Sometimes	30.1	23.5	40.4
Never	60.2	68.3	49.9
N	(966)	(565)	(401)

Less than 10% at both levels stated that their school was "often" too crowded. A large proportion of students at both levels stated that it was "never" too crowded. In contrast to the teachers' responses on roominess where the K-6 level teachers were less satisfied than 7-9 teachers, a considerably higher proportion of K-6 students were satisfied than 7-9 students; 69% of K-6 students compared to 50% of 7-9 students never found their schools too crowded.

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1. On a seven point scale ratings 1, 2, 3 were considered relatively good, 4 neutral, 5, 6, 7 relatively poor.

These findings were confirmed in the responses of some students to the question, "what would you tell a visitor about your open plan school?"; 34 were positive comments such as "lots of room", while only 13 were negative regarding crowding.

3. Availability Of Additional Facilities

Open areas without adjacent non-committed space available provide quite different teaching environments than those with accessible seminar rooms, common areas or enclosed classrooms.

"(I am concerned about)... the lack of enough closed areas to be used for French, testing, movies, etc."	"(I am concerned)...that the school be provided with a sufficient variety of open and enclosed space so that there is motivational function served by the environment and that special needs of subjects and individuals can be met."
K-6 Teacher	7-9 Teacher

a. Availability of Seminar Rooms:

"I wouldn't want to go to a school that didn't have any seminars because you can go into them when it's noisy in the area or when you are doing special work."	"I feel people should have free access to any seminar room at any time which is not always done that way."
K-6 Student	7-9 Student

Table 48: Distribution Of Teachers By Frequency Of Availability Of A Seminar Room

	LEVEL		
	K-6	7-9	
		Type of Space	
Availability	All	Open	Enclosed
All the time	30.0	18.3	28.1
Most of the time	23.3	37.8	15.7
Sometimes	28.1	36.6	30.3
Never	18.5	7.3	25.8
N	(313)	(82)	(89)

Of those teachers who had access to a seminar room over half said it was available "all or most of the time". At the 7-9 level, teachers in open areas were much more likely to have one available than 7-9 teachers in enclosed areas. Presumably, the latter teachers have somewhat less need.

b. Access to Common Area:

Table 49: Distribution Of Teachers By Ease Of Access To A Common Area

	LEVEL		
	K-6	7-9	
		Type of Space	
Access To Common Area	All	Open	Enclosed
Adjoining teaching area	49.8	58.5	24.4
Close to teaching area	27.3	30.5	26.7
Far from teaching area	3.9	7.3	14.4
No common area available	19.0	3.7	34.4
N	(311)	(82)	(90)

The layout of most SEF schools provided accessible common areas for a majority of teachers at both levels. More 7-9 teachers in open areas had a common adjoining their teaching area than any other set of teachers.

c. Availability of Enclosed Classrooms

Table 50: Distribution Of Teachers By Frequency Of Availability Of Enclosed Classrooms

	LEVEL		
		7-9	
		Type of Space	
Availability	All	Open	Enclosed
All/most of the time	26.9	13.5	57.8
Sometimes	24.3	48.1	13.3
Never	48.9	38.3	28.9
N	(309)	(81)	(90)

Although seminar rooms and common areas were reported to be almost equally available at both K-6 and 7-9 levels, differences emerged on the availability of enclosed classrooms. A large proportion of teachers at both levels, never had the use of an enclosed classroom. Only one-quarter of the K-6 and one-tenth of the 7-9 teachers in open areas reported that an enclosed classroom was generally available. The significance of these findings are apparent from another data source.

One of the items in the Ideal Open Plan School Scale was "There are a sufficient number of enclosed spaces to complement the open plan". Over half the teachers reported that this was a relatively poor descriptor of their school, suggesting that there is an insufficient amount of complementary enclosed space in many SEF schools.

IN SUMMARY, most SEF teachers reported fairly good access to seminar rooms and common areas; supplementary enclosed classrooms were less available.

4. Extent Of Privacy As Perceived By Teachers and Students

The concept of privacy has not been clearly defined in research literature on open plan schools. For some people it seems to mean a way to separate themselves geographically from the rest of the group; for others it means being left alone to work.

The SEF E5 Study stated, "More than half of all teachers in the sample felt provisions for privacy were inferior. This was true in open and traditional schools, SEF and non-SEF".[1] However, Ziegler (1973) found that teachers in open areas differed "more on the dimension of privacy, than that of noise, from the closed teaching areas".[2]

Brunetti (1971) reported that "such factors as density are more important than space in considering noise, distraction and privacy."[3]

Teachers in this study were asked how they felt about the adequacy of privacy for teachers and students in their school. Students were asked about their perceptions of their own privacy.

Table 51: Distribution Of Teachers By Perceptions Of Adequacy Of Privacy For Themselves

Enough Privacy	% Overall	% K-6	% 7-9
All/most of the time	47.8	44.3	54.1
Sometimes	37.4	38.9	34.9
Never	14.7	16.9	10.9

Teachers were generally positive about the amount of privacy they had in SEF schools. More 7-9 teachers than K-6 teachers reported that most of the time they had sufficient privacy (54% vs 44%).

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1. Metropolitan Toronto School Board, Study of Educational Facilities, E5: Academic Evaluation: An Interim Report," (Toronto: 1972), p. 65.
2. Suzanne Ziegler, "Open Plan Schools, Open Area Classrooms, and Open Education: Attitudes and Practices in the Borough of York," (Toronto: York Borough Board of Education, 1973), p. 34.
3. Frank A. Brunetti, "Open Space: A Status Report," Memorandum No. 1, (Stanford: School Environment Study, School Planning Laboratory, School of Education, Stanford University, 1971), p. 16.

> "I find it very difficult to develop a close feeling with the class. They are influenced by activities in other areas. I would like more privacy in which to develop a "class pride" - belonging, caring for each other. For this you need much quiet time and much group discussion without any interference."
>
> K-6 Teacher

> "A student has no space within the school to be private or alone. It seems imperative to me that every person have available to him a place to go, to shut himself away and get his head together. No consideration for this need is given. Even more seminar rooms would help to alleviate the pressure of numbers and noise in the open area."
>
> 7-9 Teacher

A high proportion of teachers reported sufficient privacy "all or most of the time" for teachers but only "sometimes" for students.

Table 52: Distribution Of Teachers By Perception Of Adequacy Of Privacy For Students

Enough Privacy	% Overall	% K-6	% 7-9
All/most of the time	37.9	34.3	44.0
Sometimes	48.7	51.0	44.6
Never	13.4	14.6	11.4

Table 53: Distribution Of Students By Perception Of Adequacy Of Privacy For Students

Enough Privacy	% Overall	% K-6	% 7-9
All/most of the time	37.5	33.4	44.4
Sometimes	41.3	44.4	38.2
Never	19.9	22.1	17.5

Almost exactly the same percentages of teachers as students felt that students had enough privacy "all or most of the time". However, they differed at the other end of the scale. Nearly 15% of K-6 teachers but 22% of K-6 students reported that students "never" had enough privacy.

Although most students reported that they "sometimes" or "often" had enough privacy, a sizeable proportion of students at both levels (nearly 1 in 5) reported that they "never" had enough privacy. That more 7-9 students than K-6 students reported that they "often" had enough privacy (44% vs 33%), may reflect the availability of enclosed spaces.

Crowdedness and privacy seem to be unrelated measures. While more 7-9 students reported frequent crowding than K-6 students, more of them also reported adequate privacy.

"Our school is lots of fun when you have spare time. When you want to be alone you can go in the common area and when you don't you can be with friends."

"It is better than an ordinary school except there are lots of other kids and you don't get as much privacy."

K-6 Students

"It can be very private but also very together or open to everyone."

7-9 Student

There is some related information on privacy. Students were asked about whether they had their own desk or table and the importance of this to them. For a discussion of the responses to these questions, see pages 104-105.

The answers from the two teacher questions on adequacy of privacy for teachers and for students, were combined to form a Privacy Scale. More 7-9 teachers than K-6 teachers rated privacy superior on this scale (39% vs 29%).

5. Noise

Noise is an important aspect of the working environment for both teachers and students. Approximately 1 in 5 of the students mentioned "noise" as something they would tell a visitor about their open plan school. Most of these were negative comments. Likewise, about 1 in 5 of the teachers mentioned noise or distractions in their advice to teachers going into open plan for the first time. Thirty-nine teachers provided some specific advice - all the way from "use ear plugs or tranquillizers" to "make quiet corners", or "plan noisy times with other teachers". When asked, "What is your major concern about working in an open plan school?", one-third of the teachers included a reference to noise.

The problem of noise in open area schools has often been used as a major argument against building such schools. However, the noise factor is not much more of a problem in SEF open plan schools than in traditionally built schools. Durlak (1973), in his secondary analysis of the SEF E5 study, reported student and teacher data on noise in the classroom and concluded that "although there is a problem of noise to more people in the classroom/teaching areas of open space schools the problem is by no means non-existent in traditional schools."[1]

a. Research on Noise from Other Studies: Allen (1972) in a study done in British Columbia stated:

> "Whether a given amount of noise is disturbing depends on a number of factors including the size of working groups and the nature of the activity.

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[1] J.T. Durlak, J. Lehman, and J. McClain, "The School Environment: A Study of User Patterns", Ontario Ministry of Education, Grant-in-Aid of Educational Research, (Toronto: York University, 1973), p. 29.

> Generally the more actively students are involved and the smaller the group, the less they will be disturbed ... Groups of 35 children listening to one teacher can be disturbed very easily and disturb other similar groups in the same room."[1]

He also found that principals were more likely to report noise as a problem than teachers.

Brunetti (1971) pointed out that the effect of noise on student and teacher performance is inconclusive; "individual perception is a strong determinant factor that is difficult to measure."[2] From his studies of elementary and high schools he reported "that a high degree of noise does not automatically result in distraction among students,"[3] and that teachers were more bothered by noise than students.[4]

b. Teachers and Students Perceptions of Noise: Both teachers and students in the SEF study were asked whether it was too noisy for them in their teaching area or school.

"The major concern is the general noise level in the large pods. If one or two classes are in the area, the general level is not annoying. Three classes can be very frustrating. Too much time in the day is required for discipline and settling children down to an appropriate level not to be disturbing the other two classes. No class unity developed."

"The listening skills of the children are suffering. We are teaching them to block out noise in order to work alone, but in doing this they learn to turn off."

K-6 Teachers

"Do not be concerned with noise level generated in normal teaching/learning situations. Learn to block out extraneous sounds. Provide quiet work corners for hyperactive children."

7-9 Teacher

"Sometimes its loud and sometimes its quiet. It doesn't bother me too much. I just keep on doing my work. I like my school a lot."

"I like the workroom and seminar the best. I hate this school. I can't work for all the noise."

K-6 Students

"I disagree with the open plan because it is too noisy and I wouldn't recommend it."

"Its not really as noisy as most people make it out to be."

7-9 Students

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1. D. Ian Allen, "Open Plan - A Canadian Investigation," Memorandum No. 3 (Stanford: School Environment Study, School Planning Laboratory, School of Education, Stanford University, 1972), p. 5.
2. Frank A. Brunetti, "Open Space: A Status Report." Memorandum No. 1 (Stanford: School Environment Study, School Planning Laboratory, School of Education, Stanford University), p. 11.
3. Frank A. Brunetti, p. 14.
4. For further references to noise see the following studies in the (continued)

Table 54: Distribution Of Teachers By Perception Of Noise

Teaching Area Too Noisy	% Overall	% K-6	% 7-9
All/most of the time	19.3	17.3	22.8
Sometimes	66.5	69.6	61.1
Never	14.2	13.1	16.1
N	(492)	(312)	(180)

Table 55: Distribution Of Students By Perception Of Noise

School Too Noisy	% Overall	% K-6	% 7-9
Often	21.1	27.5	12.2
Sometimes	67.6	64.1	73.8
Never	10.6	8.4	14.0

Approximately two-thirds of all respondents at both levels reported noise to be a problem "sometimes". However, major differences were found amongst those who reported the school or teaching area "often too noisy". About a fifth of all teachers at both levels, a quarter of the K-6 students and a tenth of the 7-9 students were consistently bothered by noise. K-6 students and 7-9 teachers reported the highest occurrence of noise.

The further analysis of 7-9 teachers according to whether they taught in open areas or enclosed areas showed that the two sets of teachers differed in their perception of how often their teaching area was noisy.

Table 56: Distribution Of 7-9 Teachers By Their Perception Of Noise AND Openness Of Their Teaching Area

Teaching Area Too Noisy	% open area 7-9	% enclosed area 7-9
All/most of the time	31.7	15.1
Sometimes	63.4	58.1
Never	4.9	26.7
N	(82)	(86)

Twice as many open area as enclosed area 7-9 teachers reported their areas frequently noisy. And about five times as many enclosed area teachers as open area teachers said their areas were "never" too noisy. Openness of area is clearly associated with noisiness at the 7-9 level. It is indeed distressing to note that one-third of the 7-9 teachers working in open areas find their areas too noisy all or most of the time.

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4. (cont'd) Bibliography of Research on Open Plan Schools, p. 248-258: Australian Open Area School Project, Burns, Cameron, Cheek, Deibel, Florida (no. 54), Halton County, Justus, Kruchten, Kyzar, Ledbetter, Mister, Murray, Pritchard and Ziegler.

c. Sources of Noise: What type of noise bothers students most in the open plan schools? Students were asked a series of questions regarding class noise in general, and about distractions such as people talking, moving and fooling around both in their own class and in other classes.

"The children are contained too much and have to be continually aware of other classes. In your own class you wouldn't worry about the noise of excited, happy children. Here you have to be continually nagging them to tone down. It hinders spontaneity and enthusiasm."

K-6 Teacher

"I would say that it is a nice school and only one or two times a week that you get bothered from another class."

K-6 Student

"We have a pretty good school. The open plan makes it noisy when the class next door is watching a movie or if they are without supervision. Otherwise I like it a lot. I think it is a great idea to have an open room school."

7-9 Student

Table 57: Distribution Of Students By Frequency Of Being Bothered By Class Noise

Bothered By Noise In Own Class	% Overall	% K-6	% 7-9
Often	18.6	22.2	13.8
Sometimes	62.4	61.5	64.8
Never	18.3	16.3	21.5
Bothered By Noise From Other Classes			
Often	22.1	29.6	11.5
Sometimes	58.4	51.9	68.3
Never	19.1	18.5	20.2

At the 7-9 level, students were not more bothered by noise from their own class than from other classes. Two-thirds were "sometimes" bothered by noise from both their own class and other classes. A considerably higher proportion of K-6 than 7-9 students were bothered by noise. They were also more likely to report being "often" bothered by noise from other classes.

"Do you like our school? I love it but some things bug me like other classes yelling."

"It is a fair place to work in if the person does not mind a little chatter now and then."

K-6 Students

Table 58: Distribution Of Students By Frequency Of Being Bothered By Talking

	% Overall	% K-6	% 7-9
Bothered By Talking In Own Class			
Often	19.4	24.4	12.6
Sometimes	60.1	62.2	58.5
Never	19.6	13.5	28.9
Bothered By Talking In Other Classes			
Often	27.8	35.2	17.8
Sometimes	47.3	43.0	54.5
Never	24.0	21.8	27.8

Talking in class is twice as likely to be a frequent noise problem for K-6 students than 7-9 students. And again, talking originating from an external source bothers more students.

Table 59: Distribution Of Students By Frequency Of Being Bothered By Fooling Around

	% Overall	% K-6	% 7-9
Bothered By Fooling In Own Class			
Often	29.9	36.4	21.3
Sometimes	53.1	48.9	60.3
Never	16.1	14.7	18.5
Bothered By Fooling In Other Classes			
Often	16.8	21.6	10.3
Sometimes	44.4	41.7	49.3
Never	38.0	36.8	40.5

A somewhat different pattern emerged on this question. Whereas more students were bothered by class noise and talking from external sources than from sources within the class area, more students reported being often bothered by fooling which occurred in their own classes. While a higher proportion of K-6 students were often bothered by fooling around, the dominance of the source is evident at both levels.

> "I do fear that students can be easily distracted by movement. I have seen the area become far too noisy and different teachers in the area become frustrated due to noise."
>
> 7-9 Teacher

Table 60: Distribution Of Students By Frequency Of Being Bothered By Movement

	% Overall	% K-6	% 7-9
Bothered By People Moving Around In Own Class			
Often	8.5	10.5	5.8
Sometimes	42.8	41.9	45.0
Never	47.8	47.5	49.3
Bothered By People Moving Around In Other Classes			
Often	10.6	12.8	7.8
Sometimes	34.2	31.9	38.0
Never	54.5	55.3	54.3

While some critics of open plan often emphasize visual distraction from greater movement, it is not a serious concern for most students. Roughly 50% were "never" bothered by movement at all, and another 40% only "sometimes". The least annoyance for most students at both levels was from movement in other classes.

IN SUMMARY, for most students noise was a problem at least occasionally. It was a problem for more users at the K-6 than at the 7-9 level. Some distinct differences were noted between types of distraction; movement was much less of a problem than talking, fooling or noise in general. There were also important differences in the source of the noise; talking, movement and general noise originating outside of their own class, bothered more users than the same noises from their own classes. But more students were bothered by fooling around which originated in their own class.

d. Students' Noise Scales: Six noise scales were devised to provide further data on noise:

(i) Own Class Distractions
(ii) Other Class Distractions
(iii) Talking Scale
(iv) Fooling Scale
(v) Movement Scale
(vi) General Noisiness Scale

Each scale was trichotomized to provide scores for "high", "medium" and "low" amounts of noise.

The Own Class Distractions Scale was developed by combining the student responses regarding: bothered by talking, fooling around, moving and noise in own class.

The comparable ratings of distractions originating in "other" classes were combined to develop the Other Class Distractions Scale. Similar summary scales were made for each type of distraction: talking, fooling around etc., by combining the ratings for distractions originating both in "own" and in "other" classes.

Relationships among these summary scales and between these and original distraction ratings, and a number of other student variables were examined.

Students who fell into the high category of general distraction scales are a particular source of concern. These students were identified and their ratings of distractions by type and location were examined. The results were similar for both K-6 and 7-9 students. The K-6 results are presented graphically in the charts on the following page.

Interrelationships of Noise Scales: There were many significant relationships between the various measures of noise. Examination of these relationships indicates that the same people seem to be bothered regardless of the source or type of distraction. In order to feel comfortable they need a more quiet environment. It is reported in a later chapter that susceptibility to noise is related to occupancy levels but not related to the income level of the school district. School by school differences on noise suggest that the school program and the physical environment jointly influence the severity of the noise problem.

The noise scales were also related to privacy, crowdedness and perceived freedom.

Table 61: Relationship Of Noise Scales To Privacy, Crowdedness And Perceived Freedom

Students Who Measured High		Also Tended To Report
On own class distractions	At Both Levels	Never enough privacy
	At K-6 only	Often too crowded
	At 7-9 only	Never get own way
On other class distractions	At Both Levels	Never enough privacy
	At Both Levels	Often too crowded
On Talking Scale	At Both Levels	Never enough privacy
	At Both Levels	Often too crowded
	At 7-9 only	Never get own way
	At K-6 only	Never or seldom have free time in school
On Fooling Scale	At Both Levels	Often too crowded
	At Both Levels	Never get own way
On Movement Scale	At Both Levels	Often too crowded
	At Both Levels	Never get own way
On General Noisiness Scale	At Both Levels	Never enough privacy
	At Both Levels	Often too crowded

Students who found school often too crowded also tended to be high on each of the noise scales.

Students who reported they never had enough privacy were more likely than other students to be high on Own Class Distractions Scale, Other Class Distractions Scale, talking scale and general noisiness scale. The fooling scale and the

CHART 4 For K-6 Students Who Were High On The "Own Class Distractions" Scale (N = 151); A Comparison Of The Proportions Generally Bothered By Specific Distractions

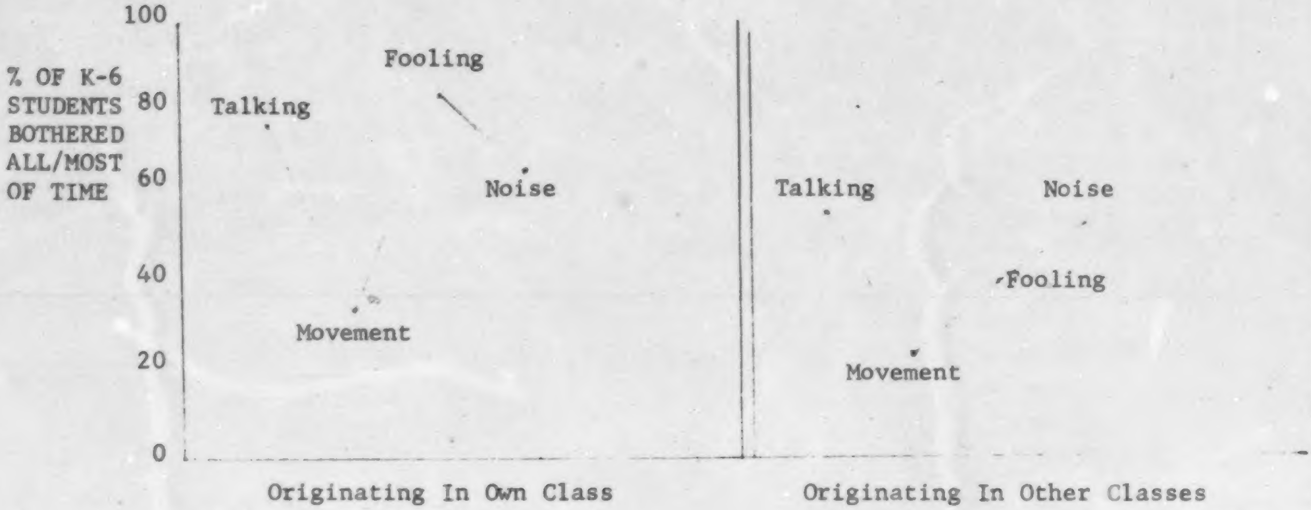
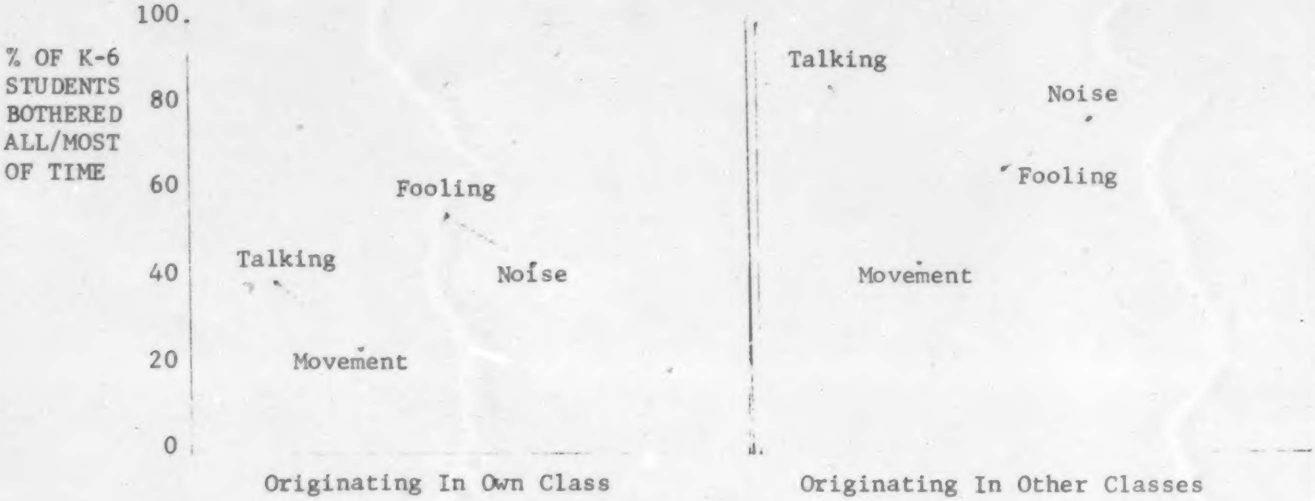


CHART 5 For K-6 Students Who Were High On The "Other Class Distractions" Scale (N = 148); A Comparison Of The Proportions Generally Bothered By Specific Distractions



movement scale were not significantly related to students' perceptions of privacy.

"Never getting own way" was related to a reported high amount of annoyance by 7-9 students on own class distractions, and on talking scale. The fooling scale and movement scale related to "never getting own way in school" for both K-6 and 7-9 students.

K-6 students who reported that they never or seldom had free time in school also tended to be high on the amount of perceived annoyance from talking.

The constraints of crowdedness appear most strongly related to every sort of distraction from all sources. This implies that more space of fewer students might do more to alleviate "noisiness" problems than more elaborate acoustical treatments or even more partitions. Declining enrolments may be a boon to some open plan schools.

CHAPTER 6

EVALUATION OF THE PHYSICAL ENVIRONMENT

In this chapter teachers' and students' satisfaction with the physical environment of SEF schools is discussed. The chapter is divided into three main sections.

1. Appearance
2. School Building and Teaching Area
3. Furniture

1. Appearance

> "I don't like the outside of it because of the windows. It looks like a jail."
>
> "It has a very cold appearance. I don't think the outside matches the inside. The inside is quite nice. Our school looks like it has just been stuck here."
>
> "It is grey on the outside but surprisingly colourful on the inside."
>
> K-6 Students

The inside and outside appearance of the school were assessed by both students and teachers. In addition, the students were asked how important the appearance of their school was to them, and teachers were asked how they liked the windows, and how important windows were to them. Some of those who disliked the plain gray SEF exterior skin with its narrow slot-loke windows, were rather vehement. The basic interior and more particularly exterior appearance of SEF schools is fairly uniform. Exterior differences emerge from the size, configuration and placement of windows and air conditioning units as well as from the setting and landscaping. Only one K-6 school has experimented with a large colourful exterior mosaic and this school happened to be the pretest school.[1]

All the schools have the same type of interior partitions and the same type of carpeting. Most schools have the SEF furniture with its five basic colours. Some schools have a colour scheme which may predominate, but most schools have neutral walls. The major interior differences arise from arrangement of furniture, number of interior walls and the students' work displayed on the walls, ceilings and furniture.

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[1] "Hillmount Public Schools," Metropolitan Toronto School Board News Letter, 4 (January 4, 1974) 3-4.

Despite all the similarities, the impact of the physical appearances of their school is different for students and teachers, and strikingly different for K-6 and 7-9 levels.

a. Exterior Appearance:

Table 62: Distribution Of Students By Satisfaction With Exterior Appearance

Amount Of Liking	% Overall	% K-6	% 7-9
Like a lot	40.0	52.1	23.5
Like a little	27.0	28.8	24.8
Neutral/dislike	32.3	19.1	51.8

K-6 students were much more positive than the 7-9 students about the exterior appearance of SEF schools. Over half the K-6 students liked it a lot, and more than another quarter liked it "a little", whereas, over half the 7-9 students were either neutral or negative toward the exterior appearance.

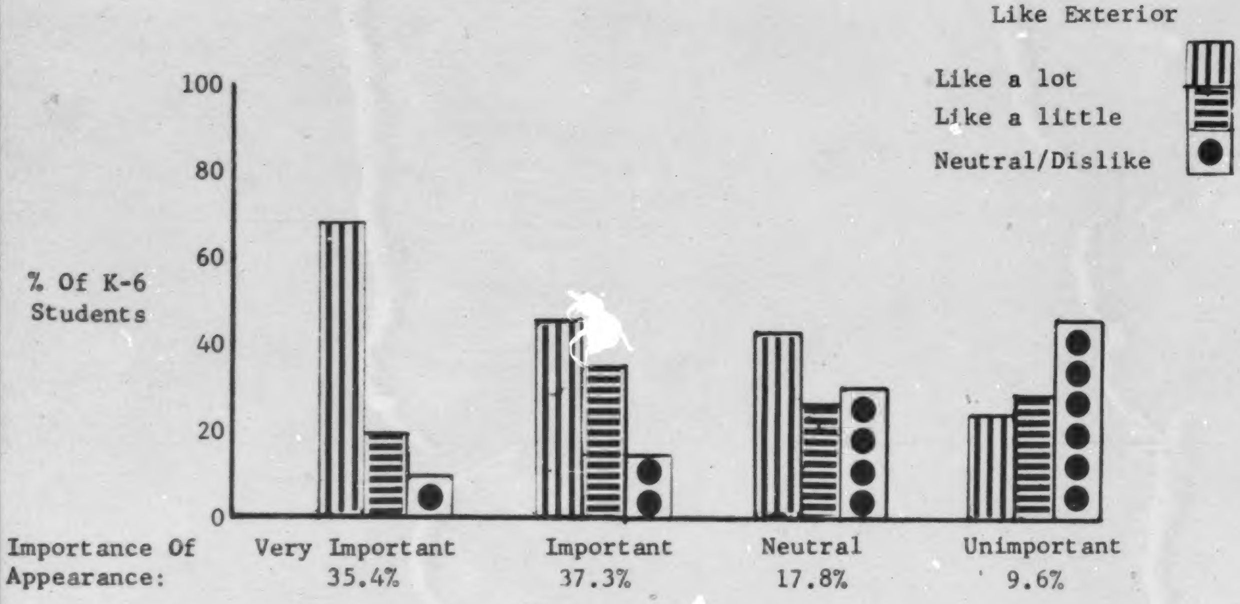
The importance of the appearance to the students was correlated highly with the liking of the appearance.

Table 63: Distribution Of Students By Importance Of The School's Appearance

Importance Of Appearance	% 1 Overall	% K-6	% 7-9
Very important	30.7	35.4	24.4
Important	37.9	37.3	39.1
Neutral	21.1	17.8	26.1
Unimportant	9.9	9.6	10.4

Significantly more K-6 students than 7-9 students reported that the school's appearance was very important. As the importance of the appearance to students increases, their liking of the exterior also goes up. Nearly 70% of the K-6 students who felt that the appearance was important reported that they liked the exterior appearance "a lot". See Chart 6.

CHART 6: Distribution Of K-6 Students By The Importance Of The School Appearance AND Amount Of Liking Exterior Appearance Of School



The same trend held at the 7-9 level: those who were neutral or unconcerned about the appearance gave more "neutral or dislike" answers about liking the outside appearance.

Table 64: Distribution Of Teachers By Satisfaction With The Exterior Appearance

Amount Of Liking	% Overall	% K-6	% 7-9
Like	36.4	29.7	47.9
Neutral	28.0	30.6	23.4
Dislike	35.6	39.6	28.6
N	(525)	(333)	(192)

A higher proportion of 7-9 teachers than K-6 teachers liked the exterior appearance (48% vs 30%). Almost the identical proportion of teachers and students at the 7-9 level reported liking the exterior (Teachers like, 47.9%; Students "like a lot" plus "like a little", 48.3%). The great discrepancy was between K-6 teachers and K-6 students. Eighty per cent of the K-6 students liked the exterior, while only 30% of K-6 teachers shared their opinion.

b. Interior Appearance:

> "This is a medium sized school that is a concrete block with tiny windows. It is dull on the outside but has a colourful interior."
>
> 7-9 Student

Overwhelmingly, the students liked the interior appearance of their schools; more K-6 students than 7-9 students liked it "a lot".

Table 65: Distribution Of Students By Satisfaction With Interior Appearance

Amount Of Liking	% Overall	% K-6	% 7-9
A lot	71.2	74.9	65.9
A little	19.3	16.8	22.9
Neutral/Dislike	9.4	8.3	11.2

Most teachers were also positive about the interior appearance, although not in such a high proportion as the students.

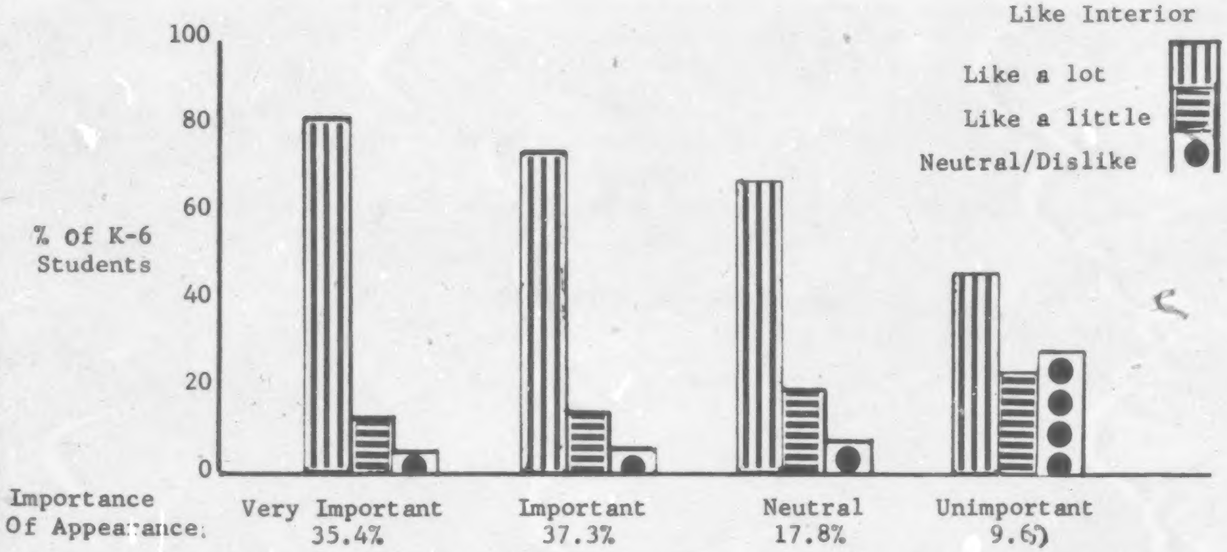
Table 66: Distribution Of Teachers By Satisfaction With Interior Appearance

Amount Of Liking	% Overall	% K-6	% 7-9
Like a lot	59.2	63.5	51.8
Like a little	24.9	22.3	29.5
Neutral/Dislike	15.8	14.2	18.7

For the K-6 teachers, their satisfaction varied widely between exterior and interior; only 30% liked the exterior but 86% liked the interior. The difference was somewhat less extreme for the 7-9 teachers; 48% liked the exterior, and 81% liked the interior.

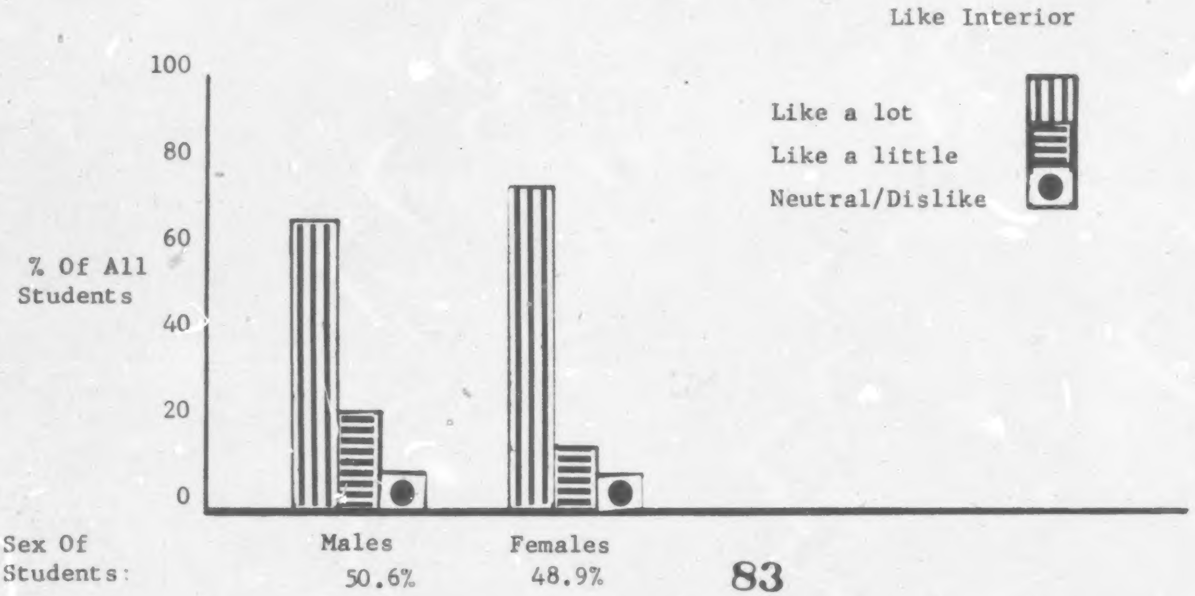
For the students, once again, the importance of the appearance was positively related to liking the appearance. See Chart 7.

CHART 7: Distribution Of K-6 Students By Importance Of Appearance AND Amount Of Liking The Interior Appearance



Two biographical characteristics of students were associated with liking the school's interior appearance: sex and number of schools attended. More girls than boys liked the interior appearance "a lot". See Chart

CHART 8: Distribution Of All Students By Sex AND Satisfaction With The Interior Appearance



Experience in a number of schools may increase students' awareness of a new environment. K-6 students who reported attending more schools, were more likely to report they liked the interior appearance "a lot".

IN SUMMARY, K-6 students liked both the interior and exterior appearance. K-6 teachers disliked the exterior but liked the interior. Half the 7-9 users, both teachers and students, liked the exterior and a much larger proportion liked the interior.

c. Windows:

"Some people say it looks like a jail because of the windows." "One thing is that we don't have enough windows, that's about it."	"Not enough windows. Windows are very important and children should be kept in touch with the natural environment much more. Too many cement blocks to look at. Visually stagnating."
K-6 Students	K-6 Teacher

Teachers were asked how they liked the windows in their area and how important it was for them to have windows.[1]

Approximately one-quarter of the K-6 teachers and the 7-9 teachers in open areas and half the 7-9 teachers in enclosed areas had no windows. The following table excludes those teachers with no windows.

Table 67: Distribution Of Teachers With Windows By Satisfaction With Windows In Area

	LEVEL		
	K-6	7-9	
		Type of Space	
Amount Of Liking	All	Open	Enclosed
Like	33.3	30.0	44.0
Neutral	24.0	28.3	19.5
Dislike	42.7	41.7	36.5
N	(246)	(60)	(38)

K-6 teachers and 7-9 teachers in open areas gave almost identical responses; one-third liked the windows and two-fifths disliked them. More 7-9 teachers working in enclosed areas liked the windows than their colleagues in open areas.

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1. Thomas A. Markus, "The Function of Windows - A Reappraisal," Building Science, 2 (1967): 97-121. This paper examines contribution of windows to sunshine awareness, need of a view, privacy, and the effect of blinds.

Table 68: Distribution Of Teachers By The Importance Of Having Windows In Teaching Area

Importance Of Windows	% Overall	% K-6	% 7-9
Very important	49.9	52.9	44.5
Important	21.3	21.3	21.4
Neutral	17.8	16.8	19.7
Unimportant	11.0	9.0	14.5
N	(483)	(310)	(173)

A large proportion of teachers at both levels reported that it was important to have windows, and for more than a half of the K-6 teachers it was "very important". Proportionately, more teachers in open space reported windows to be important than teachers in enclosed space. This tendency was stronger at the K-6 level.

Nearly half of the teachers who did not have windows said windows were "very important". Also, teachers to whom windows were important tended to be teachers who disliked windows,[1] and who gave more inferior ratings to other aspects of the environment in their own area.

IN SUMMARY, one-quarter of the teachers reported "no windows" in their areas. Teachers working in enclosed areas were more likely to be satisfied with their windows. Teachers without windows tended to report windows to be very important. Teachers for whom windows were important were more likely to rate other aspects of their environment "inferior".

2. School Building And Teaching Areas

This section covers students' assessment of the building as a whole, the lunchroom and the school climate. The more extensive teacher data includes adequacy of layout, acoustics, lighting, atmosphere, for the whole school and for individual teaching areas. Principals and vice-principals were not asked to assess the individual teaching areas.

a. Assessment of School Building by Students: Students were asked how much they liked their school building, considering all the school buildings they knew.

Table 69: Distribution Of Students By Satisfaction With School Building

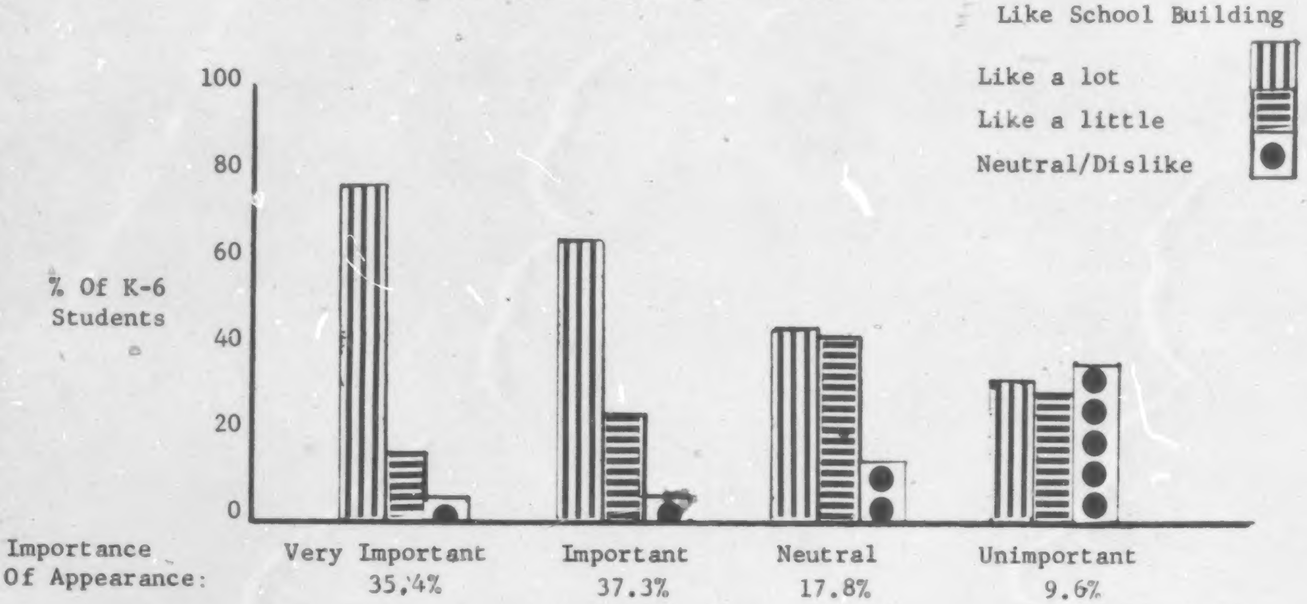
Amount Of Liking	% Overall	% K-6	% 7-9
Like a lot	62.9	63.4	62.7
Like a little	24.4	26.0	22.4
Neutral/Dislike	12.3	10.6	14.9

---

[1] This is the opposite trend to the students on a similar question about importance of appearance. Students who rated importance high, also tended to like the appearance.

Three in 5 students reported that they liked their school building "a lot". Again the importance of the appearance was related to the number of students at both levels who found the building to their liking. The greater the importance of appearance, the greater the proportion of students who reported positively. Chart 9 illustrates this relationship for K-6 students.

CHART 9: Distribution Of K-6 Students By Importance Of Appearance AND Their Liking Of School Building As A Whole



These results as well as those relating to appearance (Charts 6 & 7) may suggest that students faced with inescapable unpleasant circumstances tend to lower the psychological importance of that circumstance.

b. Assessment of Lunchroom and Cafeteria by Students:

> "Our cafetorium is big and we can eat lunch with all our friends. The food is good and always fresh; drinks are cold."
>
> 7-9 Student

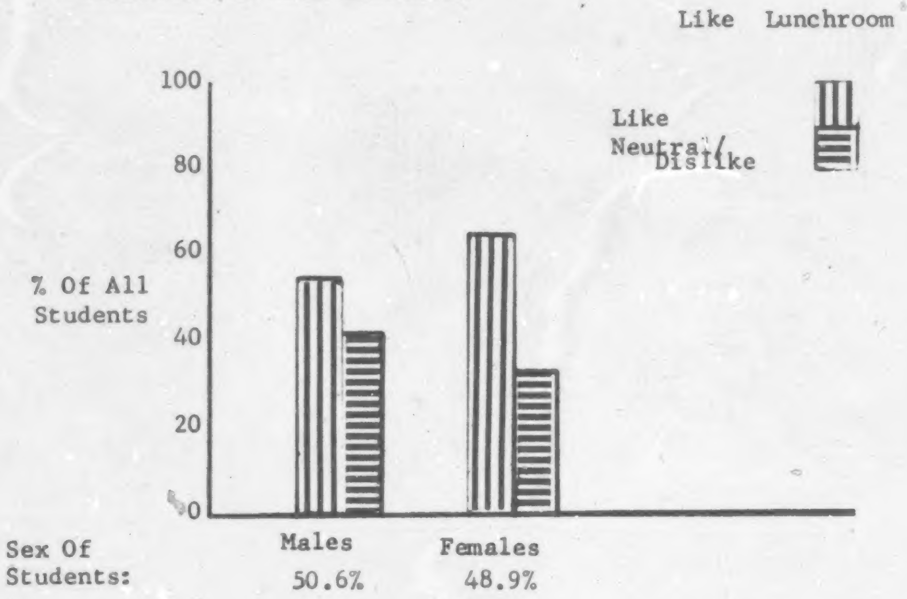
Most K-6 schools did not have an area specifically designed as a lunchroom, and less than a third of the students ever ate lunch at school. The large majority of 7-9 students ate lunch at school, and all schools at this level had a cafeteria. Only those students who ate lunch at school were included in data under discussion.

Table 70: Distribution Of Students By Satisfaction With Lunchroom

Amount Of Liking	% K-6	% 7-9
Like Lunchroom	66.5	59.1
Neutral/Dislike	33.5	40.9
N	(164)	(367)

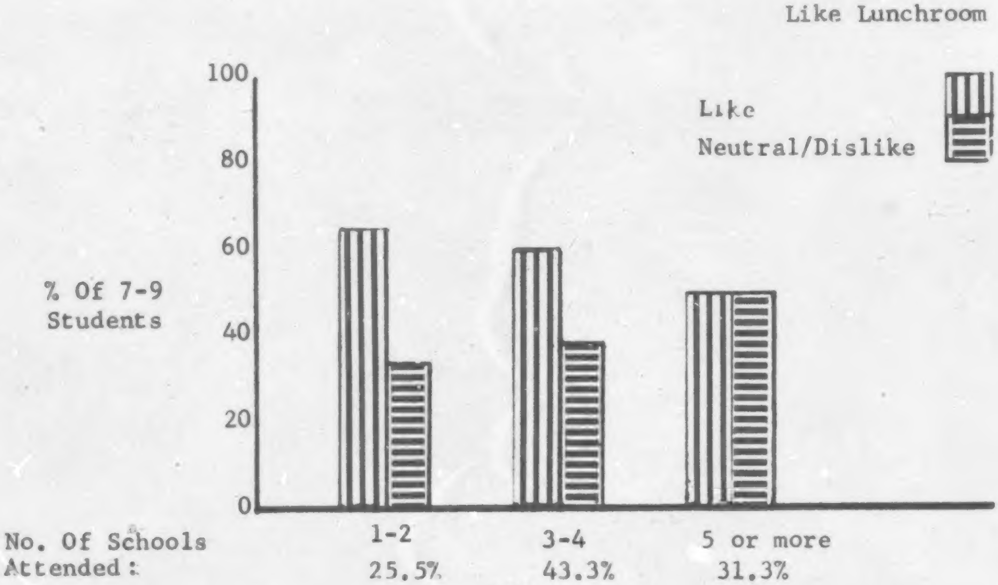
A larger proportion of K-6 students than 7-9 students liked their lunchroom, despite the fact that they may not have had a special facility. However, 3 in 5 of the 7-9 students were satisfied with their cafeteria. Overall, more girls than boys expressed positive opinions. See Chart

CHART 10: Distribution Of All Students By Sex AND Satisfaction With Lunchroom



More 7-9 students who had experience in a number of different schools reported negatively on the SEF cafeterias: 50% of these 7-9 students compared to 41% of all 7-9 students were either neutral, or disliked the facility. See Chart 11.

CHART 11: Distribution Of 7-9 Students By Number Of Schools Attended AND Satisfaction With Cafeteria



c. Environmental Characteristics:

(i) School Layout and Location of Teaching Area:

> "Upstairs is open, downstairs you have the office, art room, home ec. and shop room, gym and activity room etc. ... Upstairs you have carpet all through the rooms which are three walled and open and most look into a big common area."
>
> "The school was divided into two duplexes north and south. The upstairs is open plan the downstairs is not. Upstairs we do French, English Math, Social Science, downstairs, gym music art, home ec., etc. The cafetorium has a cafe and a stage in it. I also like it very much better than a non-open plan."
>
> 7-9 Students

Layouts varied greatly from school to school.[1] For instance there were one, two and three storey schools. Arrangements of interior walls varied from school to school, generally K-6 schools had far fewer interior walls. Sometimes open areas were only on one floor; sometimes the library was located near teaching areas, sometimes located more with community use than school use in mind. Special facilities were differently arranged in nearly every school.

---

[1] See Appendix IX, pp. 269-276 for selected floor plans.

Table 71: Distribution Of Teachers By Satisfaction With School Layout And Location Of Teaching Area

Adequacy Of School Layout	% Overall	% K-6	% 7-9
Superior	18.2	15.9	22.1
Adequate	57.0	58.0	55.3
Inferior	24.9	26.1	22.6
N	(523)	(333)	(190)
Adequacy Of Area Location			
Superior	32.0	31.0	33.7
Adequate	52.2	54.3	48.6
Inferior	15.8	14.7	17.7
N	(494)	(313)	(181)

A majority of teachers rated the layout of their school as adequate; another one-fifth judged it "superior" while the remaining one-quarter marked it "inferior". Satisfaction with the location of their own teaching area was somewhat higher. One-third rated the location of their teaching area "superior", half rated it adequate; it was "inferior" to the other 15%. Dramatic school by school differences suggest that teachers are quite discriminating about facility design.

(ii) Acoustics:

> "Acoustics are poor, particularly for singing, discussions."
>
> 7-9 Teacher

Table 72: Distribution Of Teachers By Satisfaction With School And Area Acoustics

Adequacy Of School Acoustics	% Overall	% K-6	% 7-9
Superior	13.2	16.0	8.4
Adequate	57.6	63.9	47.9
Inferior	29.3	20.9	43.7
N	(516)	(326)	(190)
Adequacy Of Area Acoustics			
Superior	15.7	15.9	15.4
Adequate	60.0	66.7	48.4
Inferior	24.3	17.5	36.3
N	(497)	(315)	(182)

Despite the attention paid to acoustical treatment in SEF schools, (carpeting, coffered ceiling and acoustical ceiling tiles), nearly 1 in 5 of the K-6 teachers, and 2 in 5 of the 7-9 teachers rated both school acoustics, and area acoustics inferior. However, two-thirds of the K-6 teachers (mostly open area teachers) and nearly 60% of the 7-9 teachers in enclosed areas rated area acoustics "adequate". 7-9 Teachers in open areas were the most dissatisfied group; nearly half of them rated area acoustics inferior.

Acoustics also relate to noise which has already been discussed in Section 5 of Chapter 5, pages 55-63.

(iii) Lighting:

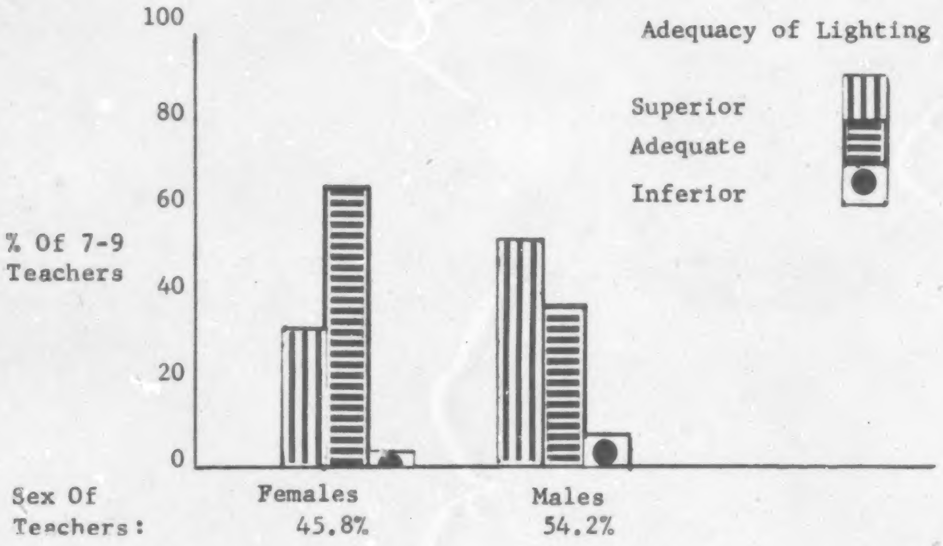
Table 73: Distribution Of Teachers By Satisfaction With School Lighting And Area Lighting

Adequacy Of School Lighting	% Overall	% K-6	% 7-9
Superior	35.9	30.9	44.3
Adequate	54.3	57.0	49.7
Inferior	9.8	12.1	5.9
N	(499)	(314)	(185)
Adequacy Of Area Lighting			
Superior	39.5	36.3	45.1
Adequate	48.8	48.2	49.7
Inferior	11.7	15.5	5.1

There was generally high satisfaction with lighting; more 7-9 teachers than K-6 teachers rated both school lighting and area lighting as superior.

K-6 teachers were more likely to assess school lighting as adequate and area lighting as either superior or inferior. It is not apparent why the proportion of teachers who rated the lighting inferior was twice as large for K-6 (12 - 15%) than for 7-9 (5 - 6%). As a group, 7-9 teachers did not distinguish between adequacy of area lighting and school lighting (nearly 95% found both either superior or adequate). However, 7-9 teachers in open areas compared to those in enclosed areas tended to be more discriminating about the school lighting; they gave it both more superior ratings and more inferior ratings. More than half of the male teachers at 7-9 level rated both school lighting and area lighting superior; they were much more likely to be positive than the female teachers.

CHART 12: Distribution Of 7-9 Teachers By Sex AND Satisfaction With School Lighting



(iv) Atmosphere: (Heating, Ventilation and Air Conditioning)

> (I am concerned about) ...
> "Lack of fresh air and a feeling of being cloistered."
>
> K-6 Teacher

> "The condition of the atmosphere in the spring and fall. The air virtually becomes dead as neither the furnace or the air conditioning comes on. Parts of the school are hot and other parts are cold."
>
> 7-9 Teacher

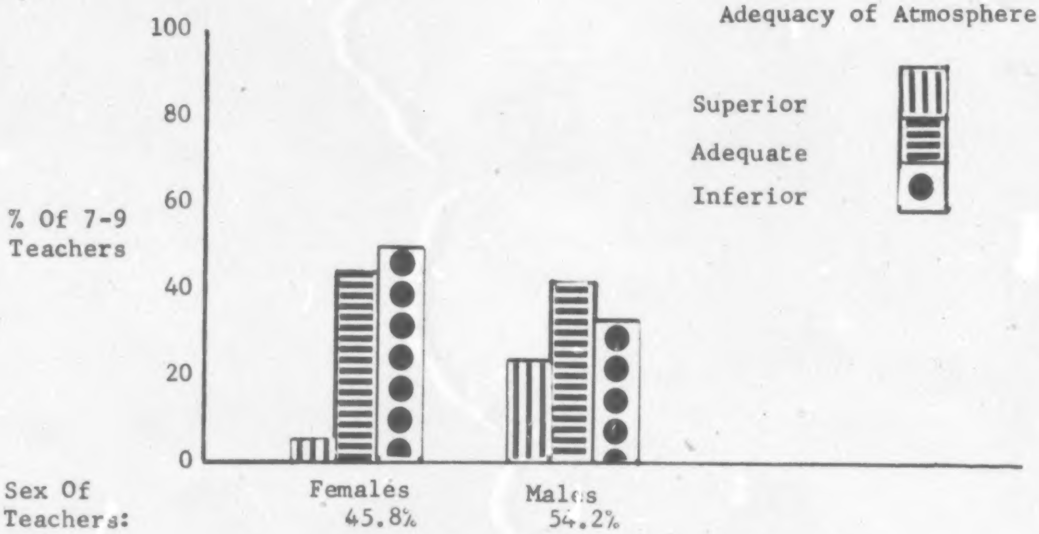
Table 74: Distribution Of Teachers By Satisfaction with School Atmosphere And Area Atmosphere

	% Overall	% K-6	% 7-9
Adequacy Of School Atmosphere			
Superior	11.1	6.6	19.0
Adequate	36.2	33.7	40.5
Inferior	52.6	59.7	40.5
N	(530)	(335)	(195)
Adequacy Of Area Atmosphere			
Superior	10.9	6.1	19.0
Adequate	39.6	39.0	40.8
Inferior	49.5	55.0	40.2
N	(497)	(313)	(184)

All schools had air conditioning and zone control for temperature and air change.

Teachers rated the atmosphere of both their own teaching area and the whole school more negatively than any other environmental feature in the SEF schools. The K-6 teachers were far more likely than 7-9 teachers to rate it "inferior", still 2 in 5 of all 7-9 teachers also rated it "inferior". Women teachers at 7-9 level were more critical than their male colleagues of both area and school atmosphere. Chart 13 illustrates this for school atmosphere.

CHART 13: Distribution Of 7-9 Teachers By Sex AND Satisfaction With School Atmosphere



IN SUMMARY, teachers were satisfied with the layout, highly satisfied with lighting, somewhat satisfied with acoustics, and generally dissatisfied with the atmosphere. However, close to 50% (sometimes more, sometimes less) of all respondents rated layout, acoustics and lighting "adequate". There were differences by level; K-6 teachers were more likely to be critical of lighting and atmosphere, and 7-9 teachers of acoustics.

(v) School Adequacy Scale: This scale was developed by combining the ratings given school layout, acoustics, lighting and atmosphere by all staff.

Table 75: Distribution Of Teachers By School Adequacy Scale

Adequacy	% Overall	% K-6	% 7-9
Superior	15.9	14.8	17.6
Adequate	56.9	56.2	58.3
Inferior	27.2	29.0	24.1
N	(504)	(317)	(187)

The overall distribution reflects the researchers' decision in designing this summary scale rather than the user reactions. There were no differences between levels on this scale.

(vi) Area Adequacy Scale: This scale was developed by combining the teachers' ratings of the location, acoustics, lighting and atmosphere of their teaching area.

Table 76: Distribution Of Teachers By Area Adequacy Scale

	LEVEL		
	K-6	7-9	
		Type of Space	
Adequacy	All	Open	Enclosed
Superior	19.3	18.8	27.1
Adequate	61.5	52.5	61.2
Inferior	19.1	28.8	11.8
N	(308)	(80)	(85)

The method of combining individual ratings resulted in equal proportions (one-fifth) of K-6 teachers being assigned to the "superior" and "inferior" categories on this summary scale. But the proportion of open area 7-9 teachers (29%) who were dissatisfied was more than double that of their colleagues working in enclosed areas (12%).

These scales were constructed to facilitate comparisons between environmental adequacy and other variables. Significant relationships are reported elsewhere in the report (see pages 142, 150, 163).

(d) Assessment of School Climate by Students:

> "I like this school because you don't have to sit on cold hard floors or be very cold. You don't have to sit there. We also do interesting work."
>
> K-6 Student

> "One other thing I like is the air conditioning because you really need it in the hot weather."
>
> 7-9 Student

Table 77: Distribution Of Students By Assessment Of School Climate

School Too Warm	% Overall	% K-6	% 7-9
Often	8.4	9.4	7.0
Sometimes	64.2	66.6	62.2
Never	26.6	24.0	30.8

Table 77: (continued)

School Too Cold	% Overall	% K-6	% 7-9
Often	5.4	3.7	8.0
Sometimes	45.0	37.9	55.9
Never	49.0	58.5	36.2

Students were not as dissatisfied with the atmosphere of the school as teachers. According to the students, the schools were not "often" either too warm or too cold. However, nearly two-thirds of the students at both levels found the school "sometimes" too warm.

A large proportion of K-6 students (nearly 3 in 5) reported that their school was "never" too cold. 7-9 Students were more likely to report their school "sometimes" too cold.

A slightly higher percentage of girls than boys found the schools never too warm, and sometimes too cold. See Charts 14 and 15.

CHART 14: Distribution Of All Students By Sex AND Frequency Of Reporting Schools Too Warm

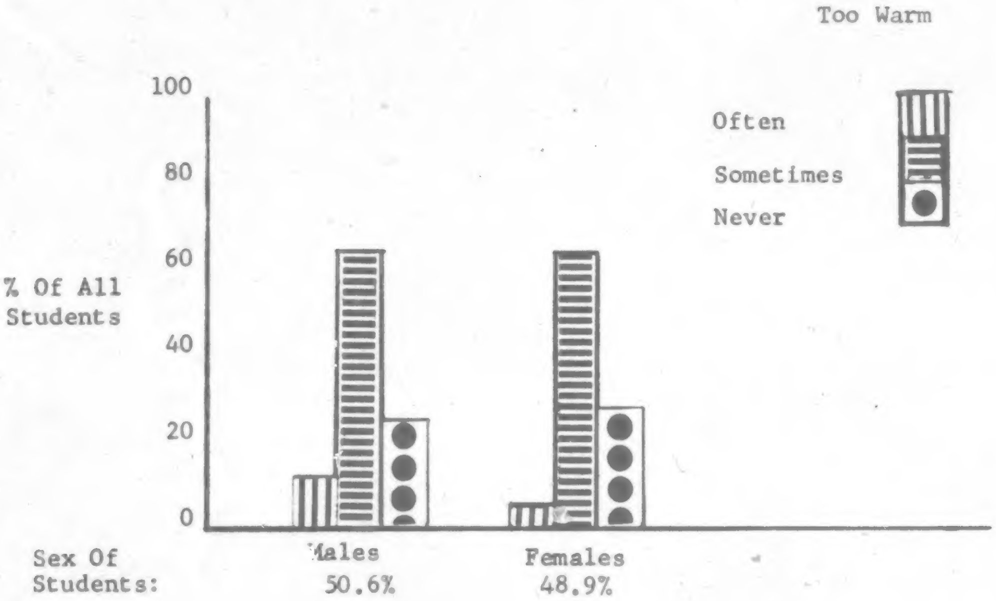
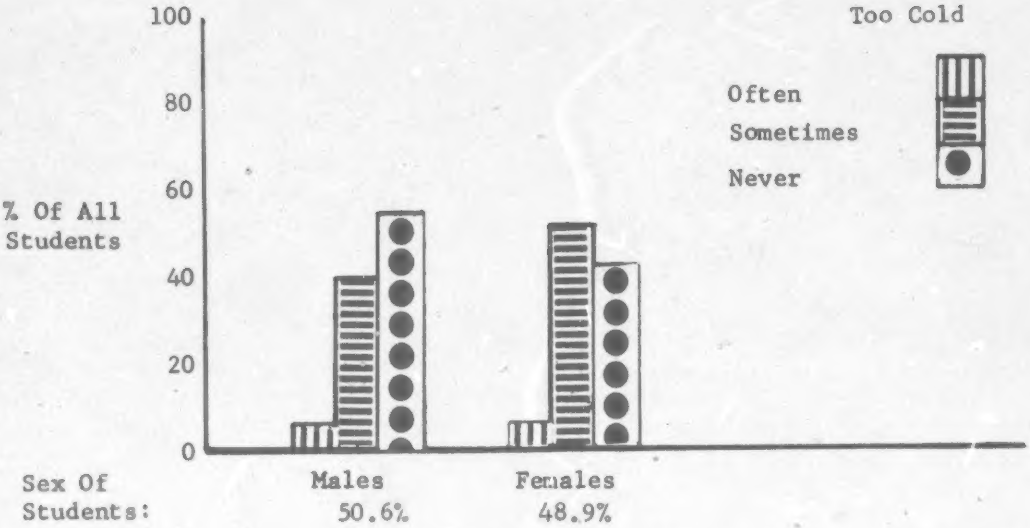


CHART 15: Distribution Of All Students By Sex AND
Frequency Of Reporting Schools Too Cold



3. Furniture

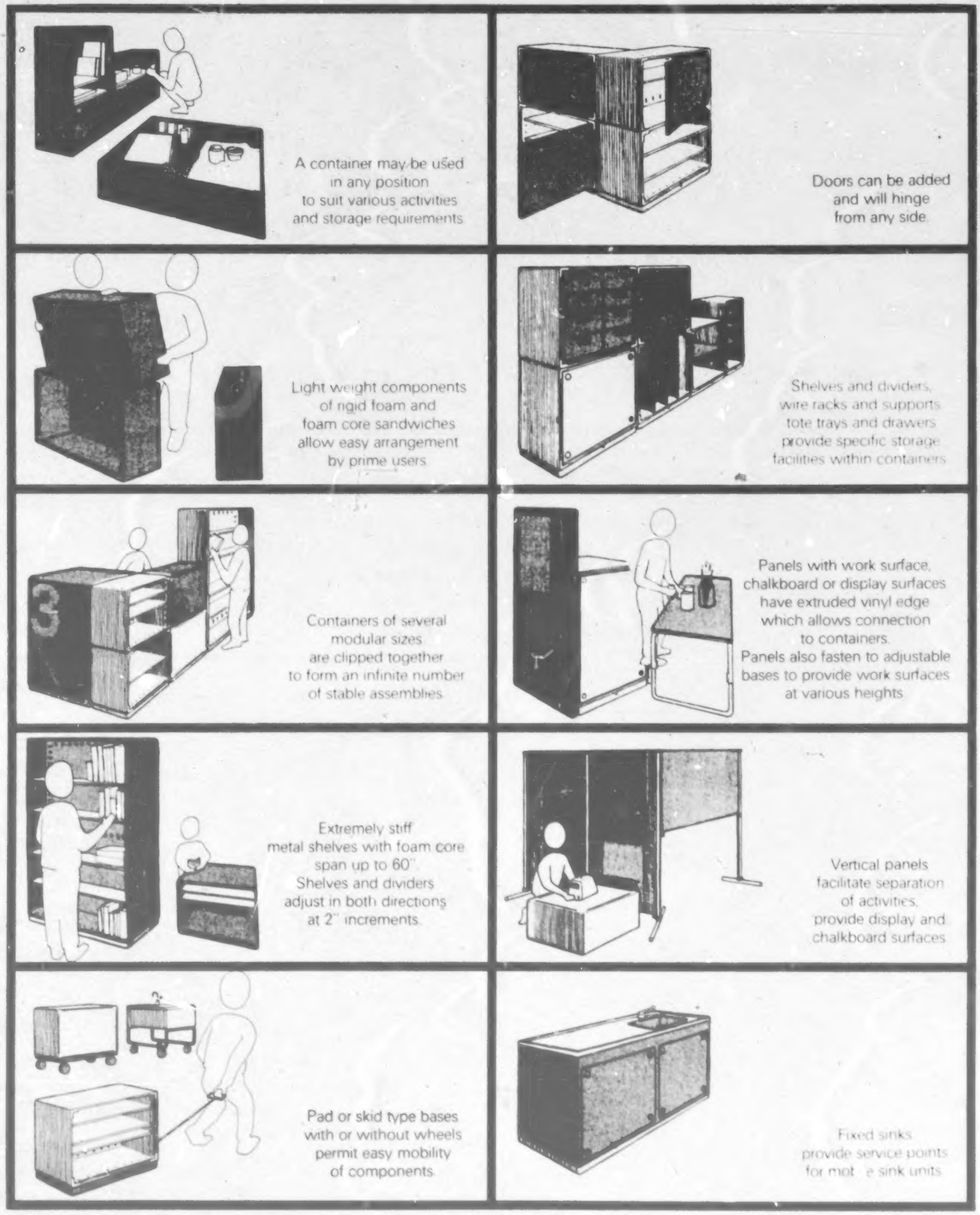
Heavy traditional furniture may dominate the appearance of an open plan area and inhibit flexibility. Several researchers have recommended that furniture be specially designed for open plan schools.

One of the ten subsystems in the SEF Building System was the casework. Basically, it was a modular system consisting of dimensionally coordinated containers, panels and bases of various sizes. See illustration in Figure 1. These were designed to be arranged and combined in a limitless number of configurations to provide storage space, bookshelves, counters, tables and display surfaces. All panels were white, the table tops, counter tops and dividers were white. The moulded polyurethane components came in five bright basic colours - yellow, red, blue, orange and green. The system did not include chairs.

Replacement schools (all K-6 level) tended to have traditional furniture from the old schools in addition to the new SEF furniture. The special facilities at the 7-9 level such as science rooms, art rooms, home economics rooms tended to have non-SEF casework. However, the major portion of the furnishings in all schools was the SEF modular casework. The distribution of the teachers by the kind of furniture used in their areas is seen in Table 78, p. 82.

FIGURE 1

Examples of Casework



A container may be used in any position to suit various activities and storage requirements

Doors can be added and will hinge from any side.

Light weight components of rigid foam and foam core sandwiches allow easy arrangement by prime users

Shelves and dividers, wire racks and supports, tote trays and drawers provide specific storage facilities within containers

Containers of several modular sizes are clipped together to form an infinite number of stable assemblies

Panels with work surface, chalkboard or display surfaces have extruded vinyl edge which allows connection to containers. Panels also fasten to adjustable bases to provide work surfaces at various heights

Extremely stiff metal shelves with foam core span up to 60". Shelves and dividers adjust in both directions at 2" increments.

Vertical panels facilitate separation of activities, provide display and chalkboard surfaces

Pad or skid type bases with or without wheels permit easy mobility of components.

Fixed sinks provide service points for mobile sink units

Table 78: Distribution Of Teachers By Kind Of Furniture Used

	LEVEL		
	K-6	7-9	
		Type of Space	
Kind Of Furniture	All	Open	Enclosed
Exclusively SEF Furniture	70.9	70.7	48.1
Exclusively standard furniture/ or a mixture of SEF & standard	29.1	29.3	51.9
N	(313)	(82)	(81)

A much higher proportion (about 70%) of K-6 and of open area 7-9 teachers at both levels had exclusively SEF furniture, than the 7-9 teachers in enclosed areas (48%).

(a) Teachers and Students Satisfaction with Furniture:

> "Our school is like a big apartment that only have tables and chairs and the equipment we use in school but it is really furnished well."
>
> "The school is friendly and the only thing I don't like is the tote boxes because I would like to have my own desk."
>
> "I like this school because it is very nice and the teachers are kind and the furniture is very colourful."
>
> K-6 Students

Table 79: Distribution Of Teachers By Satisfaction With Furniture

Satisfaction	% Overall	% K-6	% 7-9
Satisfied	49.3	54.7	39.9
Neutral	12.4	12.1	13.0
Dissatisfied	38.2	33.1	47.2

Table 80: Distribution Of Students By Satisfaction With Furniture

Satisfaction	% Overall	% K-6	% 7-9
Like Furniture	71.7	79.4	61.3
Neutral/Dislike furniture	27.9	20.6	38.7

Students were much more likely than teachers to be satisfied with their furniture. Less than 10% of all students disliked the furniture. Both teachers and students at the K-6 level were more likely to express positive feelings about the furniture than the users at the 7-9 level. Also, more 7-9 teachers in open areas were dissatisfied than their colleagues in enclosed areas (59% vs 38%).

Teachers were asked a series of questions about the quality and the sufficiency of furniture in their areas. As not all teachers had all items, the sample consisted only of teachers who were using the item in their teaching area. For some items the number (N) of respondents is small.

There was more general satisfaction than dissatisfaction. The large majority of the teachers (frequently 3 in 5) at both levels tended to use the neutral terms "adequate" and "sufficient". However, there was certainly much more use made of the inferior-insufficient and of the scale than of the superior-abundant end.

As was the case with furniture in general, more K-6 teachers than 7-9 teachers were satisfied. This proved to be true of most individual items as well, except for display surfaces. (Twice as many K-6 teachers as 7-9 teachers were critical of the quality of the display surfaces, 37% vs 18%.)

"Poor walls for display purposes."

"Too much open shelving leads to a general messy atmosphere."

K-6 Teachers

(b) Teachers' Satisfaction with SEF Furniture Compared with Other Furniture:

A further analysis of the data on each item was made. Teachers who had exclusively SEF furniture were separated from teachers who had standard furniture, or a mixture of standard and SEF furniture.

Table 81: Distribution Of Teachers By Satisfaction With The Quality And Sufficiency Of Furniture

(a) Storage Units - Quality

	% - K-6		% - 7-9		% - Overall	
	SEF	Other	SEF	Other	SEF	Other
Superior	12.7	8.0	6.6	25.4	11.0	15.8
Adequate	60.4	64.4	38.5	56.3	53.9	60.8
Inferior	26.7	27.6	54.9	18.3	35.1	23.4
N	(217)	(87)	(91)	(71)	(308)	(158)

Storage Units - Sufficiency

	% - K-6		% - 7-9		% - Overall	
	SEF	Other	SEF	Other	SEF	Other
Abundant	18.7	15.9	6.8	16.7	15.2	16.2
Sufficient	54.1	54.5	55.7	63.6	54.5	58.4
Insufficient	29.3	29.5	37.5	19.7	30.3	25.3
N	(209)	(88)	(88)	(66)	(297)	(154)

(b) Tote Boxes - Quality

	% - K-6		% - 7-9		% - Overall	
	SEF	Other	SEF	Other	SEF	Other
Superior	14.4	20.0	13.2	13.8	14.2	18.0
Adequate	66.0	65.0	55.3	72.4	64.2	67.4
Inferior	19.6	15.0	31.6	13.8	21.6	14.6
N	(194)	(60)	(38)	(29)	(232)	(87)
Tote Boxes - Sufficiency						
Abundant	21.5	17.2	11.4	18.5	17.9	17.6
Sufficient	62.3	65.5	60.0	66.7	61.9	65.9
Insufficient	16.2	17.2	28.6	14.8	18.1	16.5
N	(191)	(58)	(35)	(27)	(226)	(85)
(c) Bookshelves - Quality						
Superior	14.7	5.1	5.6	15.2	12.0	9.7
Adequate	68.2	78.2	50.0	63.6	62.8	71.5
Inferior	17.1	16.7	44.4	21.2	25.2	18.8
N	(211)	(78)	(90)	(66)	(301)	(144)
Bookshelves - Sufficiency						
Abundant	22.1	13.0	11.4	22.2	18.9	17.1
Sufficient	60.6	71.4	65.9	71.4	62.2	71.4
Insufficient	17.3	15.6	22.7	6.3	18.9	11.4
N	(208)	(77)	(88)	(63)	(296)	(140)
(d) Chairs - Quality						
Superior	20.5	16.9	8.3	24.6	16.8	20.1
Adequate	68.0	66.3	70.8	67.7	68.9	66.9
Inferior	11.4	16.9	20.8	7.7	14.3	13.0
N	(219)	(89)	(96)	(65)	(315)	(154)
Chairs - Sufficiency						
Abundant	28.7	25.0	15.6	25.0	24.8	25.0
Sufficient	65.7	69.0	61.1	65.6	64.4	67.6
Insufficient	5.6	6.0	23.3	9.4	10.8	7.4
N	(216)	(84)	(90)	(64)	(306)	(148)

	% - K-6		% - 7-9		% - Overall	
	SEF	Other	SEF	Other	SEF	Other
(e) Tables - Quality						
Superior	16.1	13.6	11.6	25.0	14.9	18.4
Adequate	57.3	64.8	53.7	60.9	56.2	63.2
Inferior	26.6	21.6	34.7	14.1	21.1	18.4
N	(218)	(88)	(95)	(64)	(313)	(152)
Tables - Sufficiency						
Abundant	21.7	20.0	9.9	21.0	18.2	20.4
Sufficient	65.0	75.3	63.7	64.5	64.6	70.7
Insufficient	13.4	4.7	26.4	14.5	17.2	8.8
N	(217)	(85)	(91)	(62)	(308)	(147)
(f) Screens - Quality						
Superior	4.5	7.0	10.6	16.7	5.9	9.9
Adequate	44.6	52.6	53.2	66.7	46.6	56.8
Inferior	51.0	40.4	36.2	16.7	47.5	33.3
N	(157)	(57)	(47)	(24)	(204)	(81)
Screens - Sufficiency						
Abundant	16.0	10.7	7.0	12.5	14.0	11.3
Sufficient	54.0	58.9	67.4	62.5	57.0	60.0
Insufficient	30.0	30.4	25.6	25.0	29.0	28.8
N	(150)	(56)	(43)	(24)	(193)	(80)
(g) Display Surfaces - Quality						
Superior	11.2	10.8	15.7	12.1	12.5	11.4
Adequate	52.4	50.6	67.4	68.2	56.7	58.4
Inferior	36.4	38.6	16.9	19.7	30.5	30.2
N	(206)	(83)	(89)	(66)	(295)	(149)
Display Surfaces - Sufficiency						
Abundant	17.8	10.1	7.1	11.1	14.6	10.6
Sufficient	35.6	39.2	50.6	42.9	40.1	40.8
Insufficient	46.5	50.6	42.4	46.0	45.3	48.6
N	(202)	(79)	(85)	(63)	(287)	(142)

(h) Chalkboard - Quality

	% - K-6		% - 7-9		% - Overall	
	SEF	Other	SEF	Other	SEF	Other
Superior	16.8	13.5	17.3	19.4	17.0	16.2
Adequate	67.0	60.8	70.4	67.7	68.2	64.0
Inferior	16.2	25.7	12.2	12.9	14.9	19.9
N	(191)	(74)	(98)	(62)	(289)	(136)

Chalkboard - Sufficiency

	% - K-6		% - 7-9		% - Overall	
	SEF	Other	SEF	Other	SEF	Other
Abundant	14.2	20.5	16.0	8.5	14.8	15.2
Sufficient	56.3	69.9	46.8	55.9	53.2	63.6
Insufficient	29.5	9.6	37.2	35.6	32.0	21.2
N	(190)	(73)	(94)	(59)	(284)	(132)

There were few differences in ratings between those who used exclusively SEF furniture and those who did not, at the K-6 level. From half to three-quarters of K-6 teachers rated most items "adequate" or "sufficient" regardless of type of furniture used. A higher proportion of those with exclusively SEF furniture deemed the provision of tables, and chalkboards insufficient and the quality of screens inferior. The quality of chalkboard was rated inferior by one-quarter of those with a mixture of furniture compared with 16% of the teachers with exclusively SEF furniture. But a higher proportion of the latter rated the quality of the bookshelves superior (15% vs 5%).

Screens and display surfaces received more "inferior" and "insufficient" ratings than any other items; for instance 40-51% of K-6 teachers rated screens "inferior", and 36-39% of these teachers also rated display surfaces "inferior". Approximately one-quarter of all K-6 teachers rated tables and storage units "inferior" in quality.

At the 7-9 level, generally half to two-thirds of the teachers rated most items "adequate". However, in contrast with the K-6 level, fairly consistent differences both on quality and sufficiency, were apparent between the users of the two types of furniture. In many cases twice the proportion of 7-9 teachers who used exclusively SEF furniture rated items "inferior" or "insufficient". This was true of storage units, tote boxes, bookshelves, tables, screens, and chairs.

Because chairs were not part of the SEF casework they can be regarded as a reference point. It seems that a significant number of 7-9 teachers who believed they had exclusively SEF casework, downgraded the chairs because they thought the chairs were SEF too.

More than 2 in 5 teachers at both levels and regardless of type of furniture used were critical of the sufficiency of display surfaces. This insufficiency of display surfaces is inherent in an open plan school, and is exacerbated when an open program is developed which encourages a wide use of materials. Teachers in SEF schools have made ingenious use of the furniture and the ceiling, as well as the walls, tackboards and screens. It is possible that the demand for display surfaces is simply insatiable.

There were no significant differences in ratings between the open areas and enclosed area 7-9 teachers on the following items of furniture: tote boxes, chalkboards, screens and display surfaces; quality of bookshelves, tables and chairs. However, both the quality and sufficiency of storage units and the sufficiency of tables and chairs were rated inferior by a higher proportion of open area 7-9 teachers.

IN SUMMARY, more teachers were critical of the quality of the furniture, than of its sufficiency; many more 7-9 teachers than K-6 teachers were dissatisfied, but most teachers reported both the quality and sufficiency of most items as "adequate". There is a question about the suitability of SEF casework, as originally developed, for some intermediate school programs.

(c) Teachers and Students' Satisfaction with Coatracks and Lockers:

"My locker does not close because it falls off before I can close it."

"Lockers too easy to break into from the ends. Lockers too fragile - doors always falling off."

7-9 Students

At the K-6 level students used coatracks; at the 7-9 level they had lockers.

Table 82: Distribution Of Teachers By Satisfaction With Coatracks And Lockers

Adequacy Of Coatracks/Lockers	% Overall	% K-6	% 7-9
Superior	5.1	2.5	9.7
Adequate	48.1	39.9	62.7
Inferior	46.8	57.7	27.6
N	(511)	(326)	(185)

Few teachers at either level rated coatracks or lockers "superior". Most 7-9 teachers rated the lockers "adequate", whereas most K-6 teachers rated coatracks "inferior".

Table 83: Distribution Of K-6 Students By Satisfaction With Coatracks

	% K-6
Like coatracks	72.5
Neutral/Dislike coatracks	27.5
N	(593)

Table 84: Distribution Of 7-9 Students By Satisfaction With Lockers

	% 7-9
Like Lockers	66.4
Neutral/Dislike Lockers	33.6
N	(399)

Most students at both levels were satisfied with their coatrack/locker facilities. Approximately the same proportion (about two-thirds) of 7-9 teachers and students reported satisfaction. However, K-6 teachers and K-6 students were far apart, with most students positive about their coatracks, and over half of the teachers rating them "inferior". As the K-6 teachers do not use the coatracks, they may be reacting as much to the location, or amount of space devoted to them as to the design or durability..

CHAPTER 7

SOCIAL ENVIRONMENT

The students' assessment of the social environment, based on their perceptions of the friendliness of other students, and the helpfulness of teachers is described in this chapter. The teachers' assessment, drawn from several items in the Ideal Open Plan Scale is considered as well. The chapter also includes sections on student interaction patterns, family grouping, student work patterns, team teaching and planning.

1. Students' Perception Of Friendliness Of Students

" Ways dislike - when bullies beat up everyone, to me it happens a lot; ways I like it - when other people come along and help you with your work."

"Our school not only looks good but the teachers and students make it feel good."

K-6 Students

Table 85: Distribution Of Students By Their Perception Of Friendliness Of Students

Students Friendly	% Overall	% K-6	% 7-9
All the time	13.7	13.3	14.5
Most of the time	47.6	41.0	57.6
Sometimes	34.5	40.8	25.9
Never	3.7	4.9	2.0

7-9 Students were more inclined than K-6 students to assess their schoolmates as friendly "all or most of the time" (72% vs 54%). 41% Of K-6 students compared to 26% of 7-9 students said that other students were "sometimes" friendly.

Girls were somewhat more likely than boys to see other students as friendly.

2. Helpfulness Of Teachers As Perceived By Students

"We have nice teachers and terrible teachers."

"There are no walls and the teachers are pretty nice."

K-6 Students

"The teachers are friendly. One thing about a school is if you don't have friendly teachers school isn't worth going to."

7-9 Student

Table 86: Distribution Of Students By Their Perception Of Teachers' Helpfulness

Teachers Helpful	% Overall	% K-6	% 7-9
All the time	45.7	60.1	25.0
Most of the time	33.9	27.2	43.8
Sometimes	17.3	10.6	27.0
Never	3.0	2.1	4.3

A considerably greater proportion of K-6 students than 7-9 students perceived their teachers as helpful all of most of the time (87% vs 68%). K-6 students were not as likely to know as many teachers because they spent most of their time in their home area.

Again, female students reported teachers to be helpful all the time in slightly higher proportions than male students.

In answer to the question: "What would you tell a visitor about your open plan school?", 216 students mentioned other students, and 260 mentioned teachers. Their statements on students were almost equally divided between negative and positive ones (about 20% each); the largest number of statements were coded as "neutral". However, over half the answers which referred to teachers were positive.

IN SUMMARY, K-6 students were much more positive about the helpfulness of teachers than they were about the friendliness of other students, whereas 7-9 students perceived these two elements of the social environment as equally positive.

3. Teacher's Assessment Of The Social Environment

Three items from the Ideal Open Plan Scale[1] were used as the basis for the teacher's assessment of the social environment: (a) teachers respect and trust one another; (b) the principal is helpful and supportive; and (c) there is a good overall tone.

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[1] The frequency distributions for the items in this Scale form part of Appendix III, pp. 221-222.

a. Teachers Respect and Trust One Another: Approximately two-thirds of the teachers at both levels reported that this statement was a fairly good[1] descriptor of their school. Almost one-fifth gave it the highest possible rating.

b. The Principal is Helpful and Supportive: A large proportion of teachers marked this item as a good descriptor of their schools. More 7-9 teachers than K-6 teachers supported the statement (85% vs 72%); they were also more likely to give it the highest possible rating (52% vs 38%).

c. There is a Good Overall Tone: More 7-9 teachers than K-6 teachers rated this statement as a fairly good descriptor (77% vs 64%). Overall, most teachers at both levels were positive about the social environment of their school.

4. Student Interaction Patterns

One of the oft-cited advantages of open plan schools is the increased opportunity for social interaction. In this section data on students' interaction with each other and with their teachers is reported. It describes mutual help between students, the number of students interacted with regularly in work, play and visiting at school, and the number of teachers with whom they spent time. Finally, the frequency of family grouping (older students working with younger students) is presented.

a. Mutual Help Between Students:

"I would tell them it is noisy but it is fun. You can talk to your friend any time and help them too."

K-6 Student

"My open plan is very good. It helps students more because students can help other students. It makes you use your head more and it gives you your say."

7-9 Student

Table 87: Distribution Of Students By Frequency Of Helping Other Students With Work At School

Frequency of Help	% Overall	% K-6	% 7-9
Never	10.3	14.6	4.8
Less than once a week	26.1	30.4	21.3
1 - 2 times a week	25.3	23.8	28.5
3 - 4 times a week	17.8	15.5	21.8
5 or more times a week	18.7	15.7	23.8
N	(962)	(562)	(400)

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[1] On a seven point scale 1, 2, 3 were considered to be good, 4 was neutral, 5, 6, 7 were considered to be poor

Table 88: Distribution Of Students By Frequency Of Being Helped By Other Students With Work At School

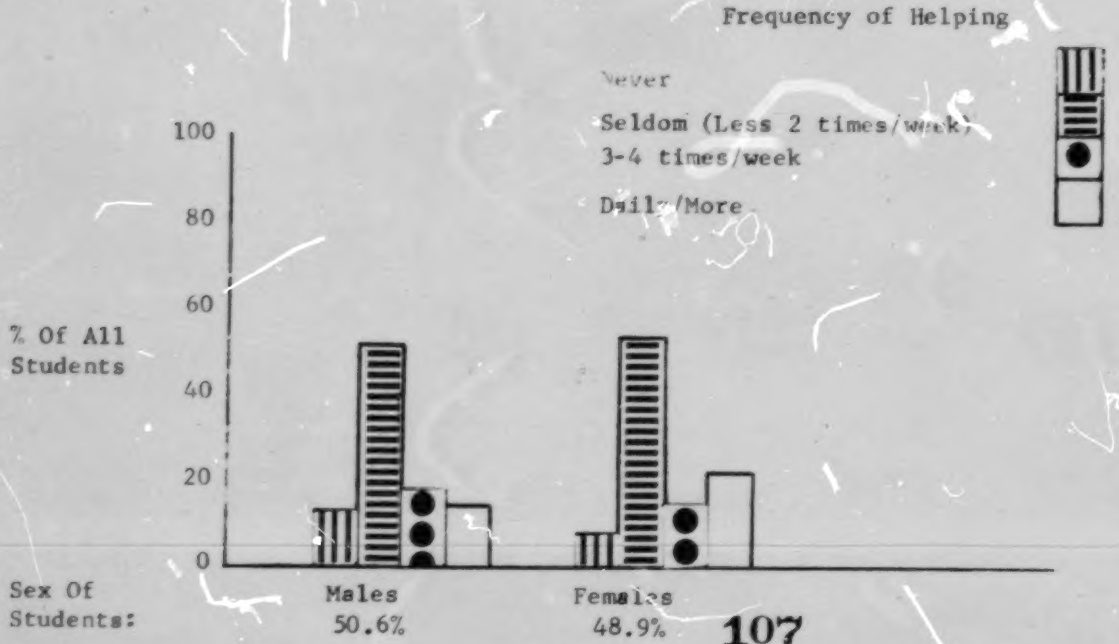
Frequency Of Help	% Overall	% K-6	% 7-9
Never	14.6	19.2	8.8
Less than once a week	34.9	36.8	33.9
1 - 2 times a week	28.2	27.0	31.2
3 - 4 times a week	13.8	11.5	17.6
5 or more times a week	6.7	5.5	8.5
N	(961)	(563)	(398)

There was much more mutual help between students reported by the 7-9 level than by the K-6 level. Students at both levels were much more likely to report that they were givers of help rather than receivers; the proportion of students who perceived that they helped other students frequently was three times the proportion of those who perceived that they received help.

Relatively few students reported that they never gave or received help at the 7-9 level but the rate was higher among the K-6 students; 15% never gave help, 20% never received it. A majority of both boys and girls reported that they were seldom involved in helping.

More girls than boys reported frequently helping others; more than 1 in 5 reported doing so daily. See Chart 16.

CHART 16: Distribution Of Students By Sex AND Frequency Of Helping Other Students



b. Number of Students Contacted Daily Through Work, Play and Visiting in School as Reported by Students:

> "I think this school is good because we can talk with our friends."

> "Well, open plan school gives you more space. You can get up to talk to someone if you whisper."

K-6 Students

Table 89: Distribution Of Students By Number of Students Contacted Through Work At School On An Average Day

Number Of Students	% Overall	% K-6	% 7-9
Less than 5 students	38.4	40.5	36.9
5 - 25 students	34.4	36.9	32.2
More than 25 students	25.6	22.6	30.9
N	(964)	(566)	(398)

Table 90: Distribution Of Students By Number Of Students Contacted Through Play At School On An Average Day

Number of Students	% Overall	% K-6	% 7-9
Less than 5 students	34.6	36.0	33.8
5 - 25 students	55.9	57.7	54.9
More than 25 students	8.3	6.3	11.3
N	(967)	(570)	(397)

Table 91: Distribution Of Students By Number Of Students Contacted Through Visiting At School On An Average Day

Number of Students	% Overall	% K-6	% 7-9
Less than 5 students	44.6	58.0	28.8
5 - 25 students	35.1	32.3	41.3
More than 25 students	17.7	9.7	29.8
N	(954)	(555)	(399)

It is apparent from these tables that students differentiate among the three kinds of interaction: work, play and visiting. A sizeable portion of students interact with less than five students at school; more than a third of all students at both levels reported working with, and playing with this small a number. Visiting is a different concept; 58% of K-6 students and only 29% of 7-9 students visited with less than five students daily. Perhaps the greater opportunities for visiting between periods at the 7-9 level account for the difference between the two levels. It is useful to recall that more of the older students reported that the students in their school were friendly "all or most of the time". The fact that more 7-9 students reported working and playing with a large group ("over 25 students"), was probably a reflection of the larger class sizes at the 7-9 level (see Chapter 5, Working Conditions, p. 45).

Although more girls than boys reported students in their schools to be friendly more often (see page 89), girls tended to play with a smaller group of students on a daily basis.

c. Number of Teacher Contacts With Students as Reported by Students:

"I enjoy talking with teachers or the janitor."

K-6 Student

"It is good because we can go to other teachers besides our own to get help."

7-9 Student

"Activity time is excellent in an open plan - young children are able to discover things for themselves and come in contact with more adults."

K-6 Teacher

Table 92: Distribution Of Students By Number Of Teachers With Whom Students Spend Time On An Average Day

Number of Teachers	% Overall	% K-6	% 7-9
One teacher	21.0	26.7	13.8
Two teachers	22.3	34.7	5.5
3 - 5 teachers	34.2	37.5	30.8
6 or more teachers	20.9	1.1	49.9
N	(964)	(565)	(399)

The 7-9 students came into contact with more teachers than K-6 students because of the rotary program. Over 80% of 7-9 students spent time with at least three teachers each day and 50% of them with six or more a day. It was somewhat surprising that nearly 1 student in 5 at this level reported being with only one or two teachers a day.

The open plan schools at the K-6 level provided students with opportunities to spend time with more than one teacher. Nearly 3 in 4 reported spending time with two or more teachers a day. Still, approximately a quarter of the students at this level reported spending all day with one teacher.

IN SUMMARY, students perceived that they gave help to other students more often than they received help, and there was more mutual help and interaction at the 7-9 level. For at least a third of the students, interaction through work, play and visiting provided contacts with less than five students. Much more extensive visiting occurred amongst older students.

5. Family Grouping

Older children working with younger children on a regular or irregular basis is referred to as family grouping.

Many writers on open education have suggested advantages of family grouping for students. There is some evidence of better work attitudes, higher levels of aspiration, and less discouragement in failure. Teachers may gain a deeper insight into the development of children.[1]

Table 93: Distribution Of Teachers By Frequency Of Reported Use Of Family Grouping

Frequency	% Overall	% K-6	% 7-9
All/most of the time	11.3	14.1	6.6
Sometimes	41.1	53.7	19.3
Never	47.6	32.3	74.0
N	(494)	(313)	(181)

Few SEF schools were organized around family grouping; only a minority of students worked with younger students "all or most of the time". A larger proportion of K-6 teachers than 7-9 teachers reported frequent occurrences (14% vs 7%). Three-quarters of the 7-9 teachers stated that this practice "never" occurred in their teaching areas.

Although few schools at either level used family grouping as a basic organization, the K-6 schools were much more likely to be experimenting with family grouping, or to be using it as one method of organizing the open areas. More than half the K-6 teachers said older students "sometimes" worked with younger students in their teaching areas.

a. Characteristics of Teachers Using Family Grouping:

(i) K-6 teachers: The more experience teachers had in the open area, the more likely they were to adopt family grouping in their areas.

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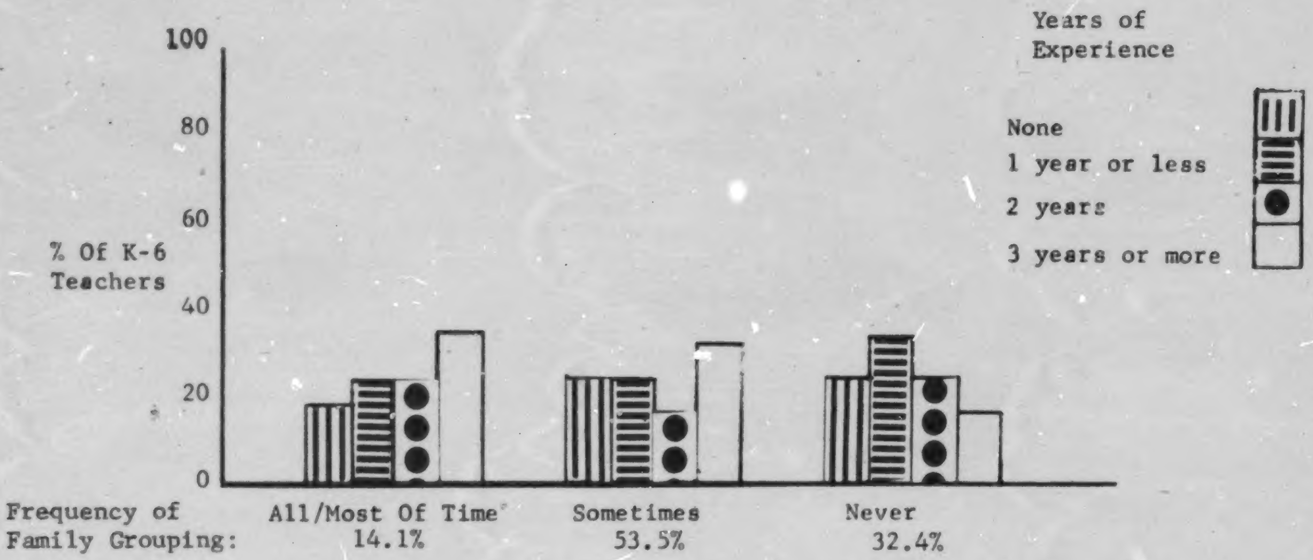
[1] For references on family grouping see "SEF Annotated Bibliography on Informal Education", (Toronto: Metropolitan Toronto School Board, 1972).

CHART 17: Distribution Of K-6 Teachers By Frequency Of Family Grouping AND Years Of Experience In Open Areas



In addition, K-6 teachers who asked to teach in their school, who preferred working in open areas (Chart 18) and who rated themselves "high" on the Innovativeness Scale, reported more frequent use of family grouping (Chart 19).

CHART 18: Distribution Of K-6 Teachers By Frequency Of Family Grouping AND Preference For Type Of Teaching Space

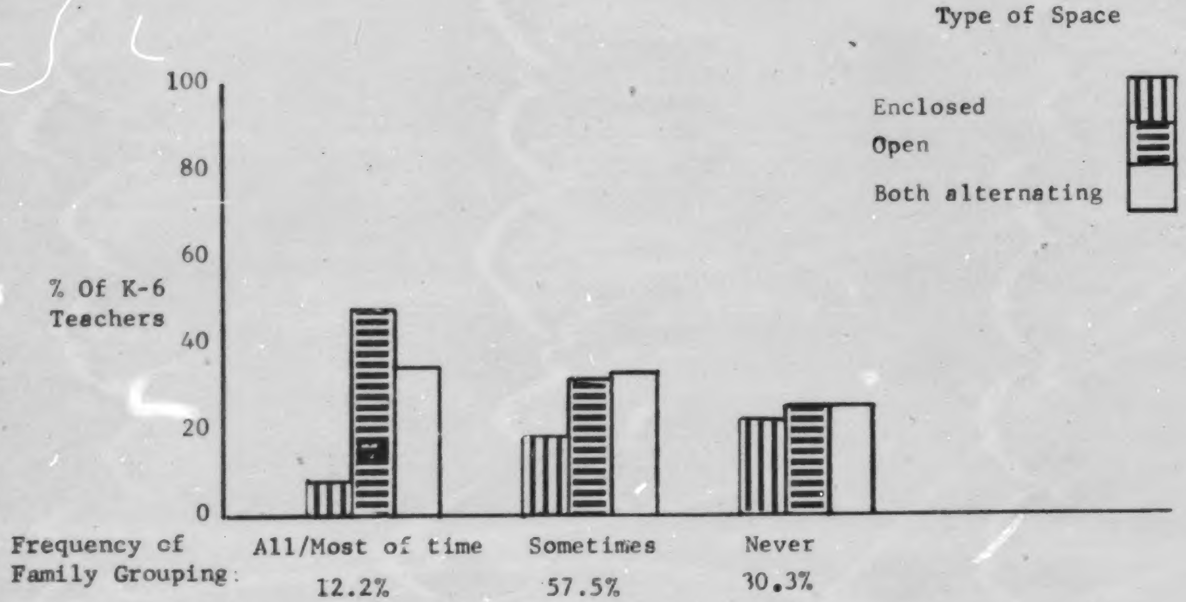
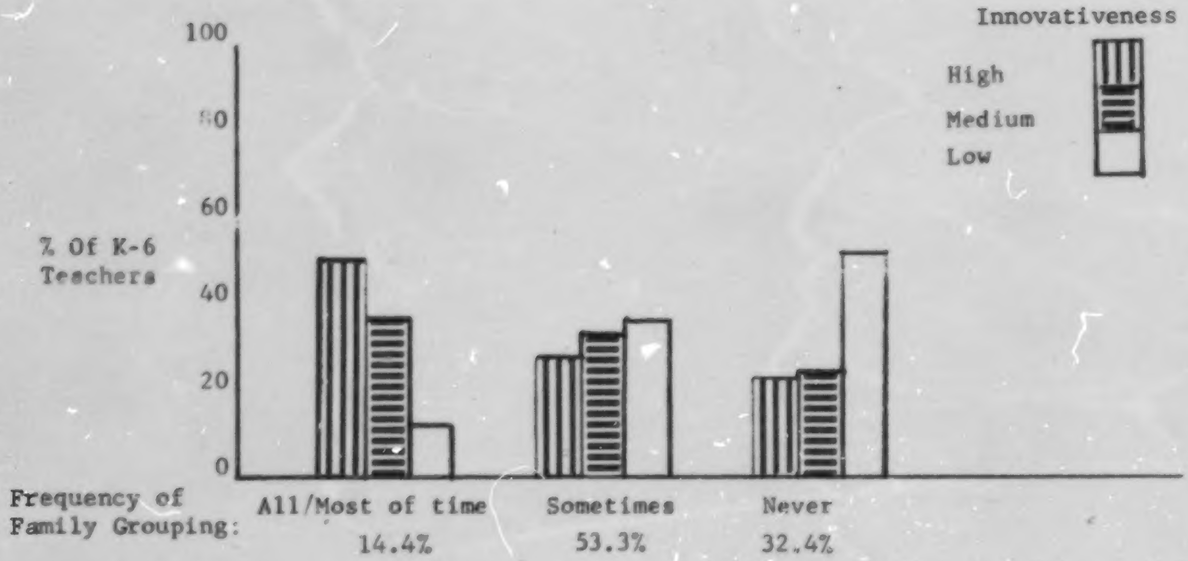
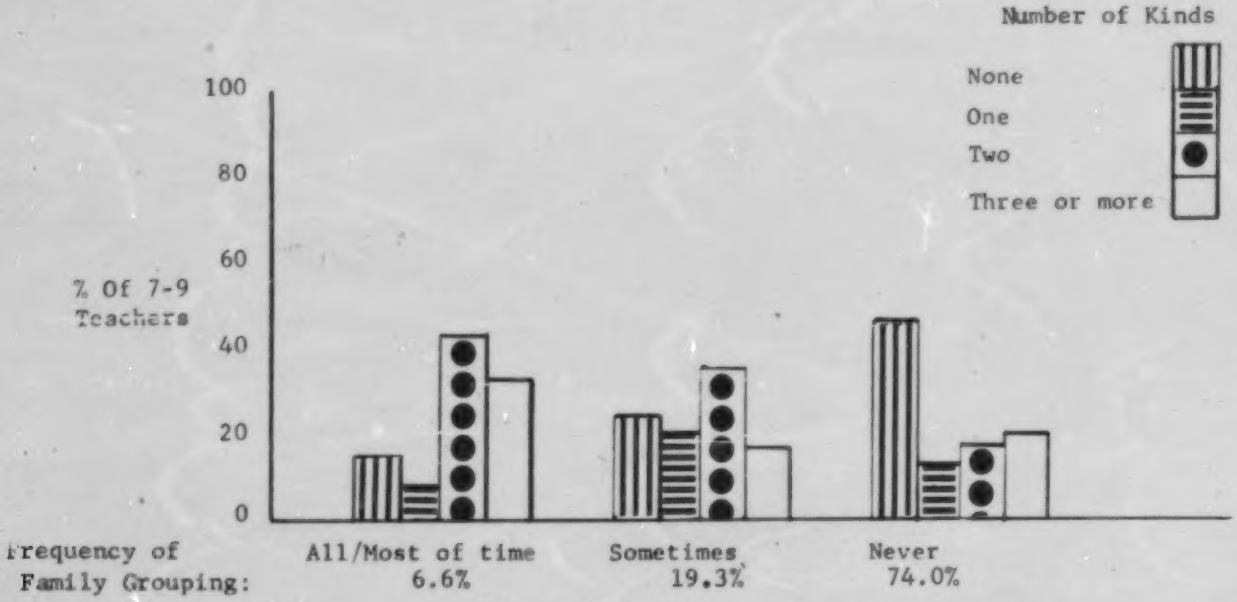


CHART 19: Distribution Of K-6 Teachers By Frequency Of Family Grouping AND Innovativeness Scale



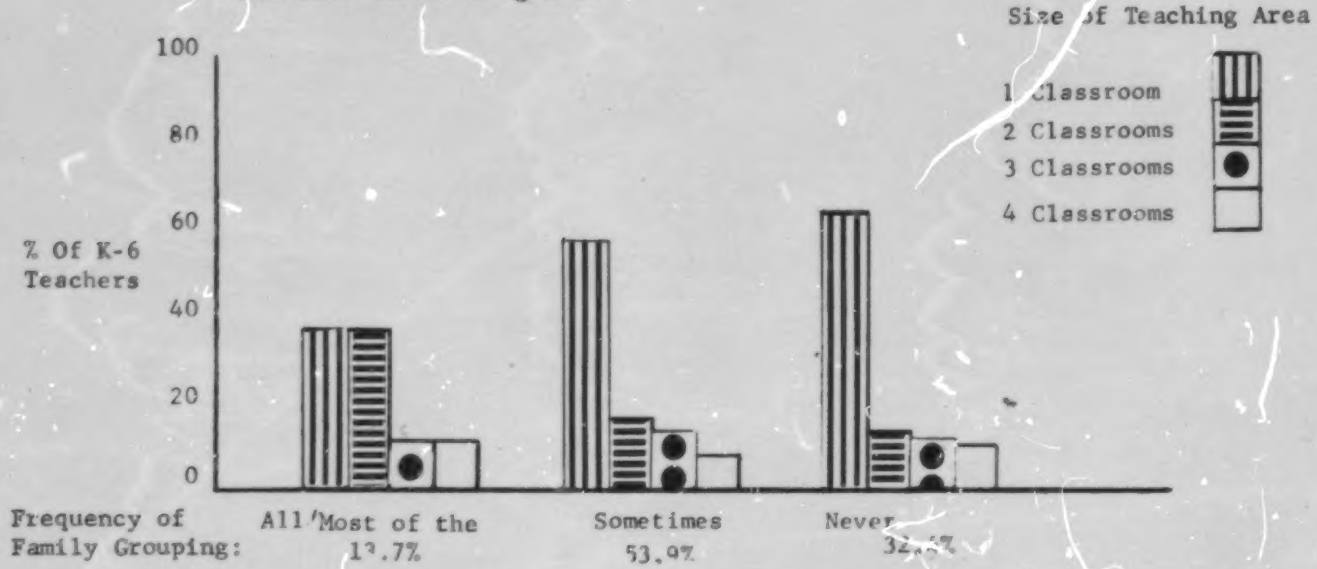
(ii) 7-9 Teachers: At the 7-9 level, there was a much lower incidence of family grouping. The kinds of 7-9 teachers who did have older children working with younger students tended to be male teachers, to have been working longer in the school, and to rate their own teaching styles as "moderately progressive". They also reported more kinds of inservice training for open plan schools as Chart 20 illustrates.

CHART 20: Distribution Of 7-9 Teachers By Frequency Of Family Grouping AND Numbers Of Kinds Of Inservice Training For Open Plan



b. Working Conditions Which Related to Family Grouping: K-6 teachers working in an area equivalent in size to "one classroom" were much less likely to ever use a family grouping organization. On the other hand, most of the reported use of family grouping occurred in areas either "one" or "two" classrooms in size.

CHART 21: Distribution Of K-6 Teachers By Frequency Of Family Grouping AND Size Of Teaching Area

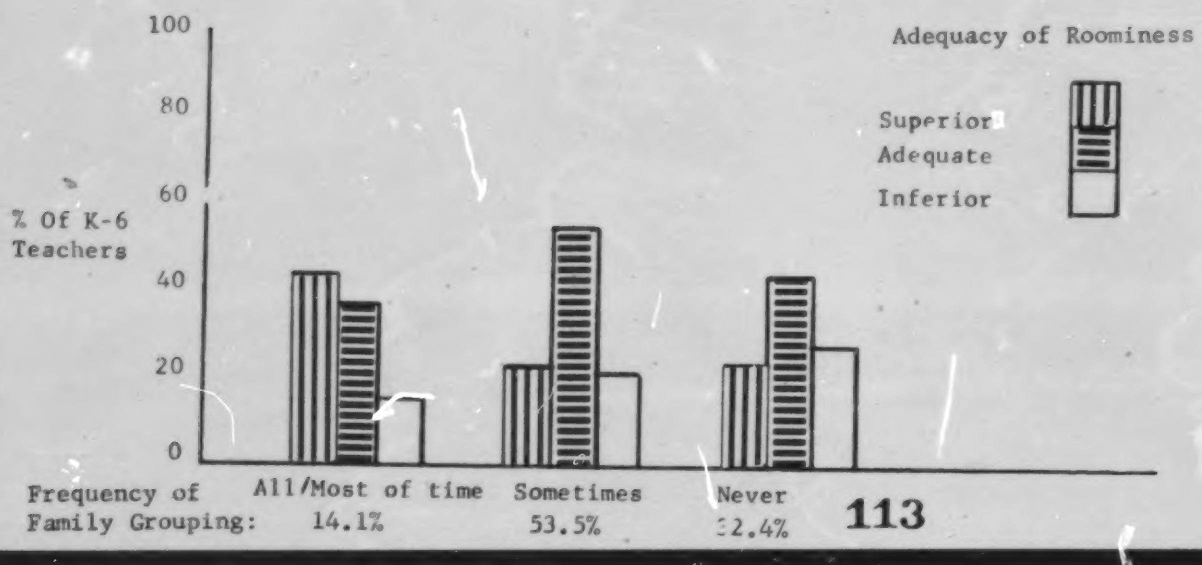


At the K-6 level, teachers using family grouping reported more adequate student privacy, whereas 7-9 teachers who did more family grouping reported less personal privacy.

c. Satisfaction With Environment and Family Grouping:

(i) K-6 Teachers: At the K-6 level, teachers who used family grouping gave more "superior" ratings to the roominess of their teaching area than other K-6 teachers.

CHART 22: Distribution Of K-6 Teachers By Frequency Of Family Grouping AND Adequacy Of Roominess Of Their Teaching Area



"Hi, I am an Iroquois student. Would you like me to show you around. As you can see, I don't really need to because there is lots of room and you can see from one end of the complex to the other."

K-6 Student

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d. Family Grouping and the Use of the Physical Environment:

(i) K-6 Teachers: In areas where K-6 teachers reported frequent family grouping the students made more use of seminar rooms (see Chart 23), and slides (see Chart 24). These teachers were also more likely to visit the library at least once a day.

CHART 23: Distribution Of K-6 Teachers By Frequency Of Family Grouping AND Frequency Of Student Use Of Seminar Rooms As Reported By Teachers

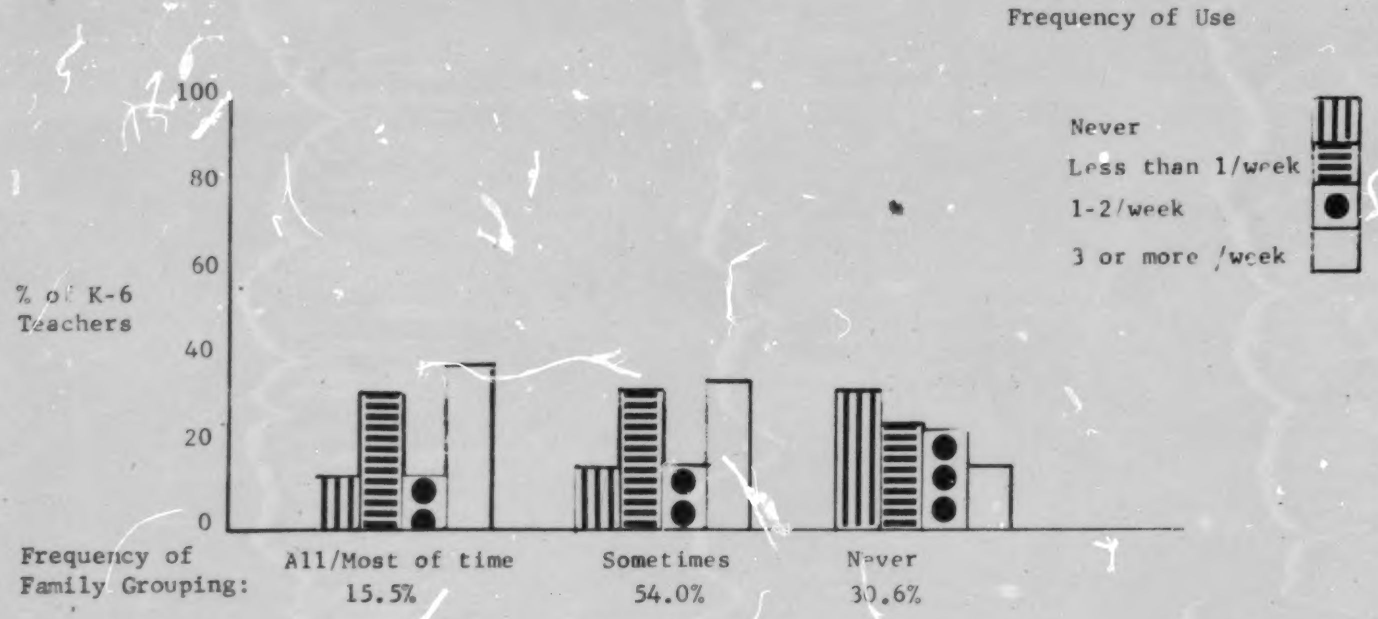
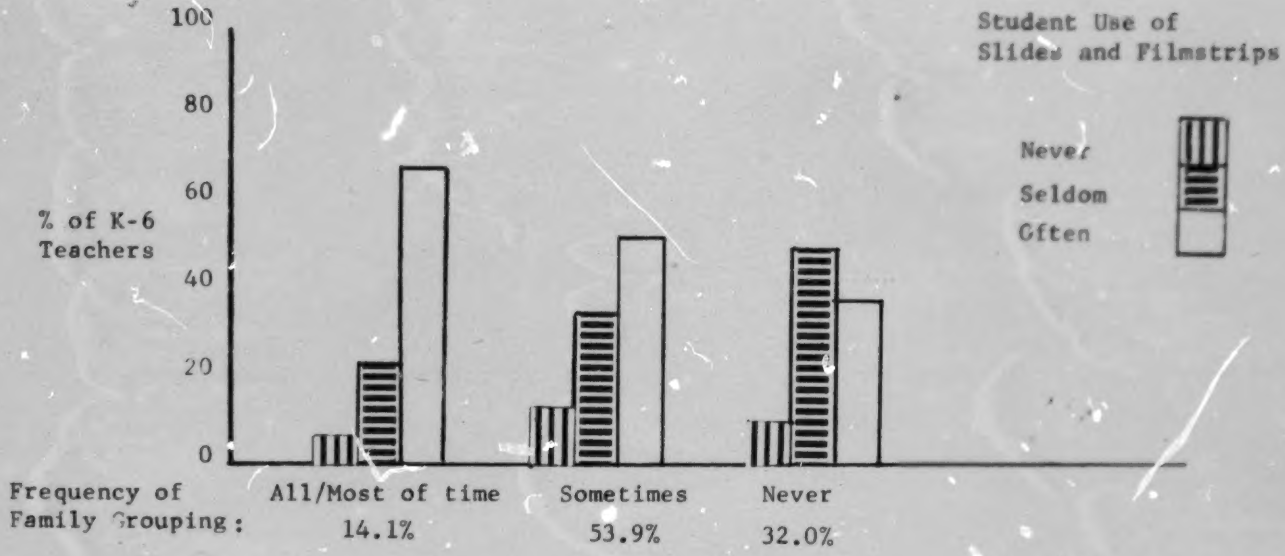
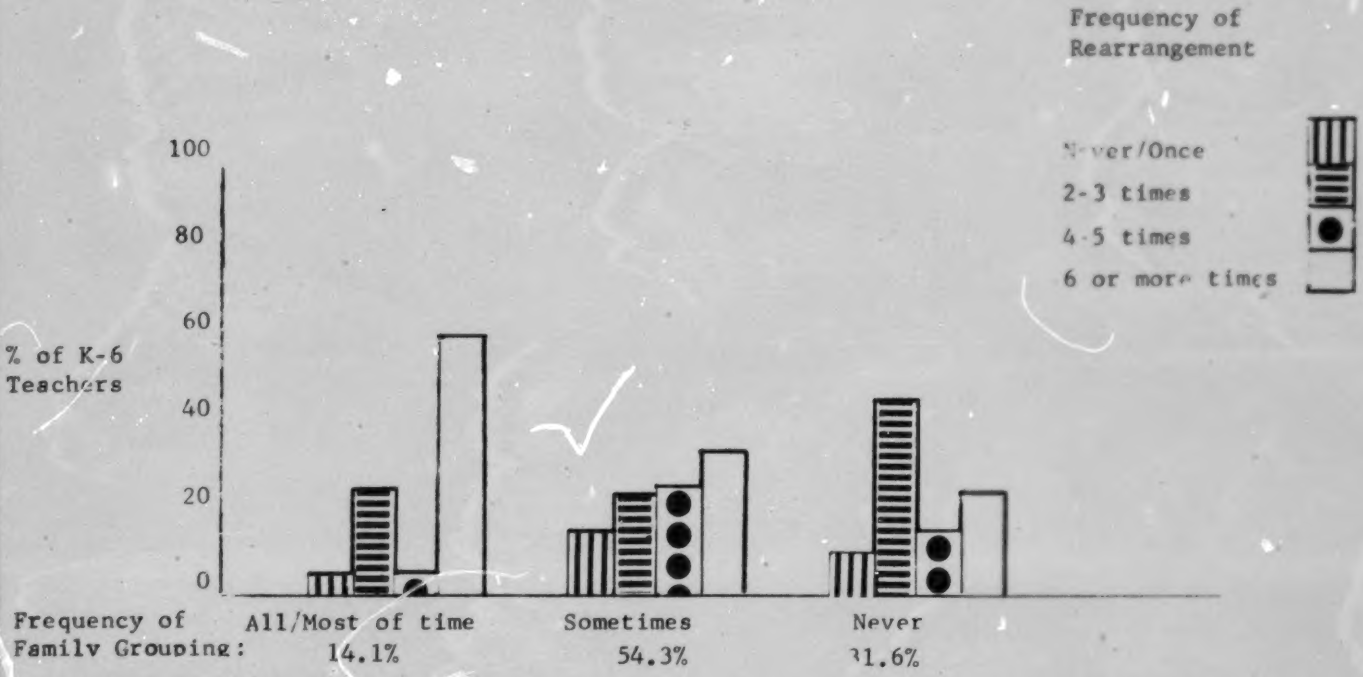


CHART 24: Distribution Of K-6 Teachers By Frequency Of Family Grouping AND Their Reporting Of Student Use Of Slides And Filmstrips



K-6 teachers who used family groupings also tended to make use of the flexibility in the SEF schools: they rearranged tables (Chart 25), moved shelves and used the folding wall more frequently than other K-6 teachers.

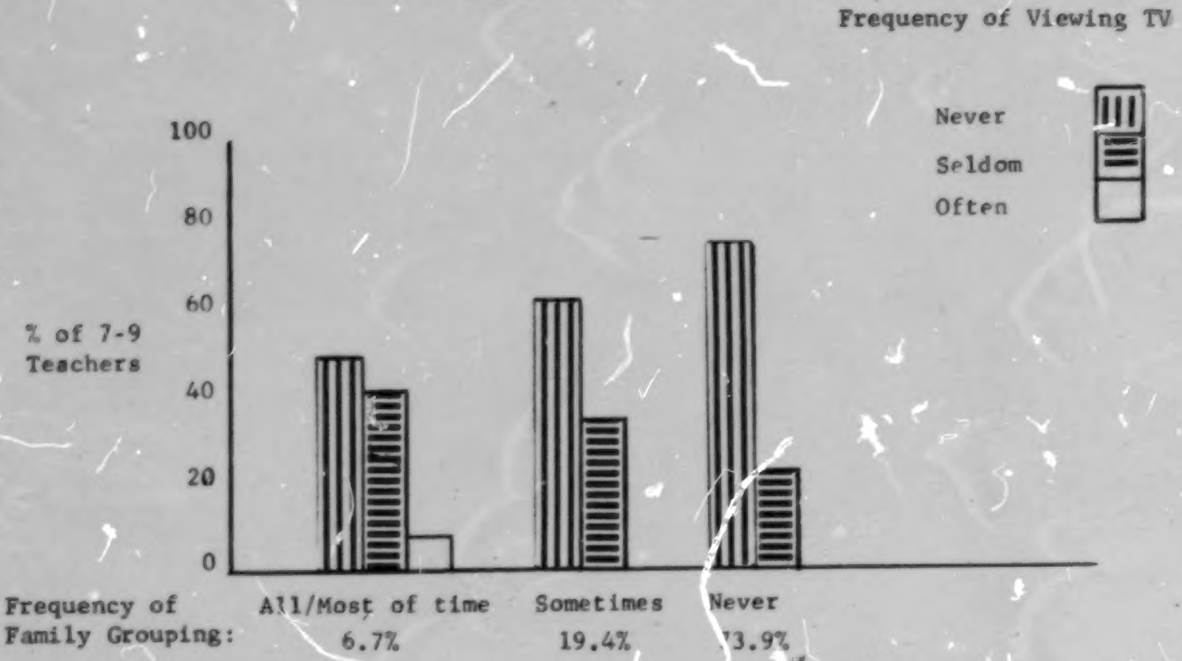
CHART 25: Distribution Of K-6 Teachers By Frequency Of Family Grouping AND Frequency Of Rearranging Tables



Predictably, K-6 teachers who used family grouping also spent more time with their teaching team.

(ii) 7-9 Teachers: As with K-6, media use increased as family grouping increased. Students in family grouping situations watched films and T.V. more frequently than other 7-9 students. Chart 26 illustrates this for television viewing.

CHART 26: Distribution Of 7-9 Teachers By Frequency Of Family Grouping AND Their Reporting Of Frequency Of Student Viewing Of Television



IN SUMMARY, few schools at either level had adopted family grouping as a basic organization, but teachers in K-6 schools were much more likely than 7-9 teachers to be using it as one method of organizing in the open areas.

Teachers who used family grouping more than other teachers were distinct in other ways. At the K-6 level they had more experience in open areas, more likely to have asked to teach in the school, to prefer teaching in open areas rather than enclosed areas and to be "high" on the Innovativeness Scale; at the 7-9 level they were more likely to be male, to have worked longer in that school, to have rated their teaching style as "moderately progressive", and to have had a variety of inservice training for open plan. K-6 teachers were more likely to be satisfied with the roominess of their teaching area. At the 7-9 level, teachers reported less personal privacy, whereas K-6 teachers reported a greater extent of privacy for students. At the K-6 level, teachers also spent more time with their team. Student audio-visual use increased (both levels), student seminar room use and teacher library use increased (K-6 only) and, at the K-6 level, the flexibility of the area was more exploited by teachers (i.e., more re-arranging of tables and shelves, and moving of folding walls), among those who frequently used family grouping. Clearly, this style of teaching involves much more than mixing students by age.

6. Student Work Patterns

Students were asked how often they worked in small groups, large groups and independently in school. In addition, they were asked to indicate how often they would like to be working in each of these modes. Another work item concerned the frequency and importance of students having their own desk or table at which to work.

Table 94: Distribution Of Students By Frequency Of Working In Small Groups

Actual Frequency	% Overall	% K-6	% 7-9
Often	28.7	36.4	18.8
Sometimes	64.7	59.8	73.9
Never	5.1	3.7	7.3
N	(964)	(556)	(399)

Table 95: Distribution Of Students By Preferred Frequency For Working In Small Groups

Frequency Preferred	% Overall	% K-6	% 7-9
Often	49.8	47.1	54.6
Sometimes	42.5	44.1	40.9
Never	7.0	8.9	4.[illegible]

Twice the proportion of K-6 students compared to 7-9 students "often" worked in small groups (36% vs 19%); only a minority "never" did so. Students at both levels would like to work in small groups much more often than they reported doing at present. The discrepancy between what is happening and what students would prefer is more pronounced at the 7-9 level; 19% of these students reported "often" working in small groups; while 55% reported they would like to do so.

Table 96: Distribution Of Students By Frequency Of Working With Whole Class

Actual Frequency	% Overall	% K-6	% 7-9
Often	53.6	45.8	65.9
Sometimes	40.3	49.0	28.8
Never	5.2	5.2	5.3

Table 97: Distribution Of Students By Preferred Frequency For Working With Whole Class

Frequency Preferred	% Overall	% K-6	% 7-9
Often	33.1	39.1	24.9
Sometimes	52.8	46.7	62.3
Never	13.5	14.2	12.7

More 7-9 students than K-6 students indicated that they "often" worked with the whole class but the proportion was large at both levels. Students showed a preference for working much less often in this mode than they were doing, and again the difference was more pronounced at the 7-9 level: 66% of the 7-9 students said they "often" worked this way, while only 25% preferred this frequency.

> "Sometimes the students are left to do work by themselves and they carry on alright."
>
> "It is very nice as far as freedom is concerned. It wouldn't be very good for insecure people because you move around a lot. I like having a lot of different teachers and not staying in one classroom all the time. It is nice not being treated like 5 year olds but sometimes we still are. It is very good working on your own."
>
> 7-9 Students

Table 98: Distribution Of Students By Frequency Of Working Independently In School

Actual Frequency	% Overall	% K-6	% 7-9
Often	48.0	45.5	53.0
Sometimes	44.1	48.2	39.8
Never	6.5	6.2	7.2
N	(966)	(564)	(402)

Table 99: Distribution Of Students By Preferred Frequency For Working Independently In School

Frequency Preferred	% Overall	% K-6	% 7-9
Often	55.6	58.5	53.8
Sometimes	36.2	33.4	41.5
Never	6.6	8.2	4.8
N	(963)	(563)	(400)

Only a minority (less than 8%) of students in SEF schools said that they "never" worked independently in school. At the 7-9 level, students were quite satisfied about the amount of time spent on independent work. The same proportion (53%) reported actual frequency and preferred frequency of working in this mode.

At the K-6 level, students would like to be working independently even more than they were doing already.

Table 100: Distribution Of Students By Frequency Of Having Their Own Workplace

Frequency Of Having Own Desk/Table	% Overall	% K-6	% 7-9
Often	37.6	44.7	27.7
Sometimes	18.2	17.9	18.7
Never	43.9	37.4	53.6

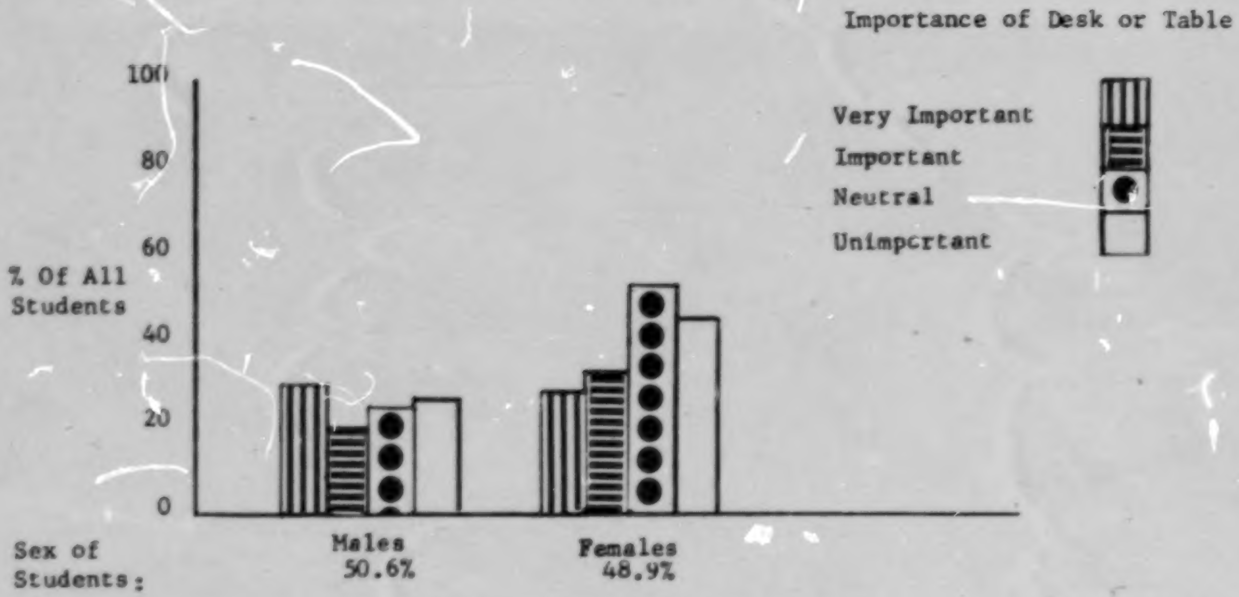
Table 101: Distribution Of Students By Importance Of Having Their Own Workplace

Importance	% Overall	% K-6	% 7-9
Very important	25.1	35.8	10.2
Important	20.9	25.3	14.9
Neutral	27.6	21.9	36.1
Unimportant	25.9	17.0	38.8

More than a half of the 7-9 students, and more than a third of the K-6 students "never" had their own desk or table. K-6 students were much more likely than 7-9 students to report that they "often" had their own place (45% vs 28%). This may simply reflect the fact that 7-9 students move to different parts of the school for different subjects and may not have perceived that desks used by other students at different times of the day were their very own, even if they had assigned places in several areas. Nonetheless, the importance of having a work place to call your own did not loom large for most 7-9 students, but for 61% of the K-6 students it was either "very important" or "important".

More girls were neutral than boys about the importance of having their own desk.

CHART 27: Distribution Of Students By Sex AND Importance Of Having Their Own Desk Or Table



IN SUMMARY, two of the three working modes, whole class and independent work, were being used widely at both levels in SEF schools. One-third of the K-6 students were working in small groups frequently. Students at both levels would like to work in small groups, and on an independent basis more frequently; they would like to be working much less frequently with the whole class than they were doing at the present. K-6 students were more likely to have their own desk or table and more likely to report it was "important".

7. Team Teaching

Open plan facilities oblige teachers to work with others. But this does not necessitate large group instruction which occurred only rarely in schools in this study. Team teaching is a method of working with others which may be broadly defined as any "group of teachers who share major responsibility for the instruction of the same group of students and who coordinate their activities among themselves."[1] Ideally, through team teaching, teachers can complement one another's abilities.

Three specific questions were asked of the teachers: proportion of time they spent with their team, whether or not their team had a leader, and the number of people on their team. 144 Teachers or 26.9% of total sample were not working in a team teaching situation. The discussion concerns only those teachers who were working, at least part of their time, on a team.

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[1] Marjorie S. Arikado, "Results of the Study on Team Teacher Satisfaction," Unpublished paper, (Toronto: Ontario Institute for Studies in Education, 1972), p. 1.

Table 102: Distribution Of Teachers By Proportion Of Time Spent With Their Team

Proportion Of Time	% Overall	% K-6	% 7-9
Less than one-quarter of their time	47.1	48.0	45.3
One-quarter to three-quarters of their time	32.2	34.2	28.2
More than three-quarters of their time	20.8	17.8	26.5
N	(342)	(225)	(117)

About half the "team-teaching" teachers at both levels reported spending more than a quarter of their time with their team; the 7-9 teachers were somewhat more likely than K-6 teachers to spend more than three-quarters of their time with the team (27% vs 18%).

"I like the two teachers I have this year. I think with a double class you get more friends. I learn more from two teachers."

K-6 Student

"The main thing is to try to develop a team spirit with your neighbouring teachers. Going it alone is hard in any school, but impossible in open area."

K-6 Teacher

"The major problem in our open area is that it is never really used as an open area. We have as many as four classes meeting separately with four teachers simultaneously. There is no educational advantage that I can see. The disadvantages are tremendous - noise (distracts students easily), mainly. If I want to use an AV aid, I have to keep it turned down so low that it is almost useless. Because of timetabling, large group instruction is impossible. So we would be better off by far with walls or dividers."

7-9 Teacher

"Team teaching is essential in order to make use of the open area. Do not get into the situation of setting up your own classroom and competing with another class."

7-9 Teacher

Table 103: Distribution Of Teachers By Whether Or Not Their Team Has A Leader

Team Has Leader	% Overall	% K-6	% 7-9
Yes	42.7	21.4	81.3
No	57.3	78.6	18.7
N	(347)	(224)	(123)

The two levels reported in exactly the opposite directions. Approximately 80% of the K-6 teachers had no designated leader, whereas about 80% of the 7-9 teachers had one. Teams of four or more members at K-6 level were more likely to have a leader than teams of 2-3 members.

Arikado's research has shown that satisfaction with the choice of leader is related to satisfaction with the team teaching situation.[1] And further, balanced teams "were significantly more satisfied with the team teaching situation than teams with leaders."[2] A balanced team is "where there are no recognized leaders ... or where leadership is shared more or less equally among all team members."[3]

> "I would encourage that person to promote unity on the team and to promote the idea of a team leader or director. So that the team functions as a whole and has an overseer who may act as a guide or rule maker, so that the uniformity of the area is held."
>
> "Try to have some say and control over who you work with (for teams). Insist that three member teams should be the maximum. Be prepared to compromise on teaching styles and teaching methods. Be sure to establish general rules for team members to follow and stick to them (as a team). Establish team priorities and policies before attempting team teaching. Be flexible."
>
> K-6 Teachers

The ideal size of a team is debated by many teachers. Patterns vary; teachers preferences vary. One school began with three teacher teams and a year later switched to two teacher teams. There has been only a limited amount of research on this particular aspect of team teaching.[4] Arikado reported "teachers in three member teams to be more satisfied than those belonging to four or five member teams."[5] Lueders-Salmon found that three or four member teams had more "active" classrooms than two member teams.[6]

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1. Arikado, p. 1.
2. *Ibid.*, p. 3.
3. *Ibid.*, p. 1.
4. See particularly Arikado, Deibel, Kaelin, Lueders-Salmon and Pritchard. For other references to team teaching in open plan research studies see Bibliography of Research on Open Plan Schools, Appendix V, p. 248-258, e.g. Evanechko, Florida (54), Halton County, Meyer, Murray, and Oldridge.
5. Arikado, p. 5.
6. Erika Anne Marie Lueders-Salmon, "Team Teaching and the "Active" Classroom: A Comparative Study of the Impact of Self-Contained Classrooms and Open Space Team Teaching Schools On Classroom Activity ," (Ph.D. Dissertation, Stanford University, 1972), p. 94.

Table 104: Distribution Of Teachers By Size Of Team

	LEVEL		
	K-6	7-9	
		Type of Space	
Size of Team	All	Open	Enclosed
2 people	31.7	8.9	33.9
3 people	24.8	10.7	10.7
4 people	17.8	23.2	26.8
5 or more people	25.7	57.1	28.6
N	(230)	(56)	(56)

All the K-6 teachers and those 7-9 teachers who taught in enclosed areas tended to be on smaller teams of 2 - 3 people than the 7-9 open area teachers. The latter tended to be on large teams of 5 or more people.

There were not a large number of significant relationships between size of team and other variables. At the K-6 level teams of four or more members tended to be in very open teaching areas, to consider "their teaching area" as equivalent in size to one classroom and to rate their teaching are "often" too noisy. Compared to 2-3 member teams they were more critical of school layout, sufficiency of display surfaces and more likely to prefer enclosed teaching areas. They also made more use of the service column, and their students were more likely to view television more frequently.

In most instances K-6 teams of two and three members reported very similarly. The one exception was that three member teams were more likely to report no preference for either an open, or enclosed, teaching area compared to all other size teams. Compared to larger teams, two and three member teams spent more time with their teams, made more use of folding walls and more use of family grouping. They were also more likely to have lower pupil teacher ratios in their areas.

At the 7-9 level, teams of four members or more were more likely to rate their teaching area as "often" too noisy, to be critical of acoustics of teaching area, and to give fewer superior ratings to their teaching areas.

Teachers at both levels on two member teams tended to spend more time working together than teachers on larger teams, and to be positive about several aspects of their environment - interior appearance, adequacy of school layout, and quality of tables.

IN SUMMARY, a large proportion of teachers worked on a team, about half of them spending more than a quarter of their time in team teaching situations. Most K-6 teams did not have a leader, whereas most 7-9 teams did. Teams varied in size, but tended to be smaller (2-3 person teams) amongst K-6 teachers and 7-9 teachers in enclosed areas, and larger (5 or more person teams) amongst 7-9 teachers in open areas. Teachers on smaller teams tended to be more satisfied with their environment.

8. Planning

> "Adequate team planning on a long term range to ensure a comprehensive and sequential course of studies that allows for individual differences. The time required for such planning is difficult to find."
>
> "Know where everything is. Be well organized while flexible at the same time. Have definite rules and regulations to begin with. As the children and teacher adapt to the area, these regulations, etc. can change."
>
> K-6 Teachers

> "Pre-planning as a team is necessary before the start of the school year. For this to be effective, the team must know the other members by June of the previous school year. A draft of the aims and methods of putting across this aim should be discussed. Aims will remain the same, but methods can be altered throughout the year."
>
> 7-9 Teacher

A concern frequently mentioned by teachers is the increased need for planning in open area schools.[1] Teachers in this study were asked how much time they spent planning by themselves, and in joint planning with other teachers.

Table 105: Distribution Of Teachers By Amount Of Time Spent In Planning By Themselves

	LEVEL		
	K-6	7-9	
		Type of Space	
Amount Of Time	All	Open	Enclosed
2 hours or less a week	11.8	1.3	16.9
2 - 3 hours a week	11.8	8.8	14.6
3 - 5 hours a week	34.7	23.8	37.1
More than 5 hours a week	41.7	66.3	31.5
N	(314)	(80)	(89)

Teachers spent more time planning by themselves than with others.

Table 106: Distribution Of Teachers By Amount Of Time Spent In Joint Planning With Other Teachers

	LEVEL		
	K-6	7-9	
		Type of Space	
Amount Of Time	All	Open	Enclosed
None	11.4	5.0	15.7
Less than 1 hour a week	27.9	28.8	36.0
1 - 2 hours a week	34.9	26.3	19.1
More than 2 hours a week	25.7	40.0	29.2
N	(315)	(80)	(89)

---

[1] Planning is discussed in several of the studies listed in Bibliography of Research on Open Plan Schools, Appendix V, p. 248-258, e.g. Allen, Fulk, Halton County, Kleparchuk, Kruchten, Mister, Murray, Pritchard and Sudbury Board.

At the 7-9 level, teachers in open areas spent much more time than either their colleagues in enclosed areas, or the K-6 teachers; two-thirds of them spent more than five hours a week planning by themselves, and, in addition, 40% of them spent more than two hours a week in joint planning. However, K-6 teachers spent more time planning than the 7-9 teachers in enclosed areas. As stated in SEF's Hints for Survival in Open Plan Schools,[1] "no matter what kind of program is followed, the question of planning is integral to success in the open plan ... not planning together ... is a destructive option."[1] Only a minority of SEF teachers reported no joint planning. This coupled with the fact that more than a quarter of all the teachers did not work with a team indicates that some coordination of activities was being done even by non-team-teaching teachers.

IN SUMMARY, teachers spent more time planning by themselves than with others. Only a minority did no joint planning. At the 7-9 level, teachers in open areas did more planning than their colleagues in enclosed areas, or than K-6 teachers.

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1. Metropolitan Toronto School Board, Study of Educational Facilities, "Hints for Survival in Open Plan Schools," (Toronto: 1973), p. 8-9.

CHAPTER 8

USE OF THE PHYSICAL FACILITIES

In this chapter the following topics are discussed: student use of seminar rooms; frequency of field trips; teacher use of preparation rooms and service column; teacher and student use of the built-in flexibility of the SEF furniture; and the use of the folding walls. The concluding section concerns student use of audiovisual materials in SEF schools.

1. Student Use Of Seminar Rooms

The availability of seminar rooms was discussed in Chapter 5, Working Conditions in SEF Schools, pages 51-52.

Students were asked how often they used seminar rooms, while teachers were asked how frequently their students used such spaces.

Table 107: Distribution Of Students By Use Of Seminar Rooms

Frequency Of Use	% Overall	% K-6	% 7-9
No Seminar Room	1.5	-	-
Never	21.0	21.0	22.3
Less than once a week	46.5	42.2	55.0
1 - 2 times a week	20.2	25.0	14.8
3 or more times a week	9.9	11.8	8.0
N	(957)	(557)	(400)

Table 108: Distribution Of Teachers By Their Reported Student Use Of Seminar Rooms

Frequency Of Use	% Overall	% K-6	% 7-9
Never	19.3	21.6	15.5
Less than once a week	32.1	30.5	34.8
1 - 2 times a week	19.1	18.6	20.0
3 or more times a week	29.5	29.4	29.7
N	(424)	(269)	(155)

Teachers and students at both levels were in general agreement that about one student in five never used seminar rooms. But they differed regarding the frequency of use. Only 10% of the students reported using seminar rooms three or more times a week, whereas 30% of the teachers reported such a high frequency for their students. This may be due to the fact that teachers reported for all their students whereas individual students reported only for themselves.

Women teachers at the 7-9 level were more likely than men to report that students never used seminar rooms; approximately a quarter of both men and women teachers claimed that their students used seminar rooms three or more times a week.

2. Field Trips

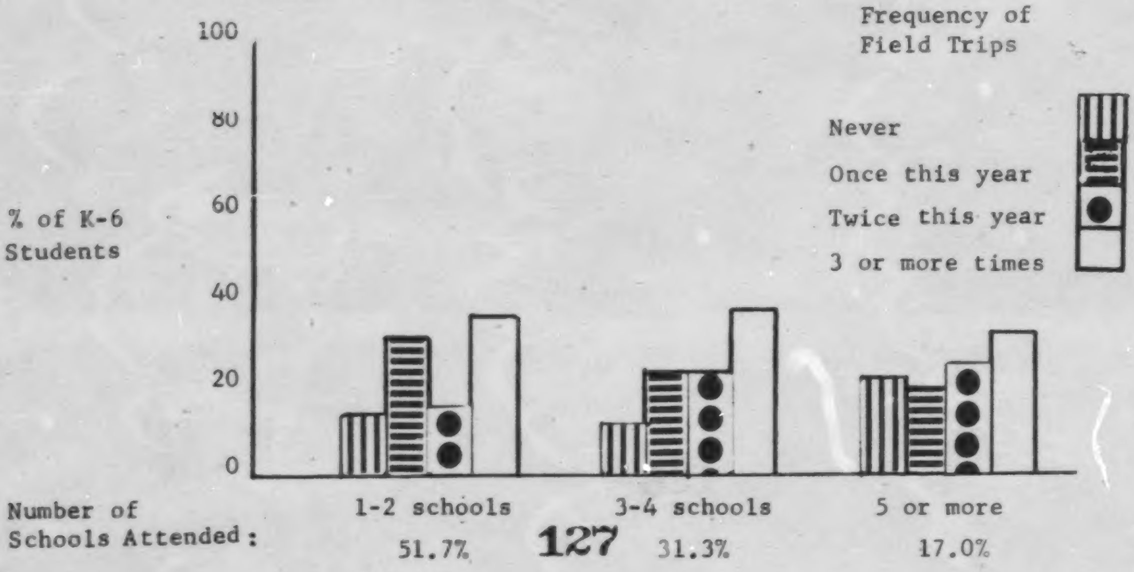
Table 109. Distribution Of Students By Frequency Of Field Trips

Frequency	% Overall	% K-6	% 7-9
Never	14.3	14.6	14.4
Once	23.9	27.5	19.6
2 times a year	23.0	19.9	28.2
3 or more times a year	37.3	37.9	37.8
N	(964)	(567)	(397)

More than a third of the students at both levels went on field trips at least three times a year. The 7-9 students reported going on field trips somewhat more frequently than K-6 students.

More highly mobile students were less likely to participate in field trips. K-6 students who had attended five or more schools were more likely not to have gone on field trips that year. (See Chart 28) The same tendency appeared at the 7-9 level; over a quarter of those who had attended five or more schools reported only one field trip.

CHART 28: Distribution Of K-6 Students By Number Of Schools Attended AND Frequency Of Field Trips



3. Teacher Preparation Room

While all SEF schools had preparation rooms for teachers, the use patterns were quite different between levels.

Table 110: Distribution Of Teachers By Frequency Of Use Of Preparation Room

Frequency	% Overall	% K-6	% 7-9
Never/less than once a week	31.2	41.4	14.8
1 - 4 times a week	17.1	19.7	12.9
Daily	13.6	9.2	20.6
More than once a day	38.1	29.7	51.6
N	(404)	(249)	(155)

K-6 teachers were much less likely to use the teacher preparation room than 7-9 teachers; 41% of the K-6 teachers compared to 15% of the 7-9 teachers, used it less than once a week. On the other hand, more than half the 7-9 teachers reported using it more than once a day. Because K-6 teachers do considerable planning, they must obviously use other locations than the teacher preparation room, presumably their teaching areas or the staff lounge.

4. Teacher Use Of Service Column[1]

Not all areas had an electric-electronic service column. This discussion concerns only those teachers who had a service column in their area.

Table 111: Distribution Of Teachers By Frequency Of Use Of Service Column

Frequency	% Overall	% K-6	% 7-9
Never	11.2	9.3	15.3
Less than once a week	17.6	14.4	24.5
1 - 5 times a week	34.2	36.3	29.6
6 or more times a week	37.1	40.0	30.6
N	(313)	(215)	(98)

There was more use of the service column at the K-6 level than at the 7-9 level; 40% of K-6 teachers compared to 30% of 7-9 teachers reported using it at least on a daily basis.

IN SUMMARY, some students never used seminar rooms; most used them less than once a week. The large majority of students had been on field trips, about a third had been three or more times in the year.

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[1] See glossary for definition.

Students who were more mobile were less likely to have participated in field trips. Half the 7-9 teachers (a much higher proportion than the K-6 teachers) made daily use of teacher preparation rooms. K-6 teachers used the service column more frequently than 7-9 teachers.

5. Use Of Flexibility

SEF furniture was designed to be especially flexible and readily mobile for use in open areas. Students were asked how often they had been involved in moving furniture, in planning the arrangement of furniture, and how often they had moved shelves and used folding walls. Teachers were asked specific questions about frequency of re-arranging tables, storage containers, shelves and doors on casework. They were also asked how often they opened or closed a folding or sliding wall between rooms.

a. Student Involvement in Moving Furniture, and Planning Arrangement of Furniture:

Table 112: Distribution Of Students By Frequency Of Moving Furniture

Frequency	% Overall	% K-6	% 7-9
Never	25.8	26.3	25.7
Once a year	21.0	22.6	19.2
2 - 3 times a year	29.9	31.9	27.4
4 or more times a year	22.6	19.1	27.7

Table 113: Distribution Of Students By Frequency Of Planning Arrangement Of Furniture

Frequency	% Overall	% K-6	% 7-9
Never	56.6	54.2	61.1
Once this year	16.1	18.6	13.0
2 - 3 times this year	16.7	17.9	15.5
4 or more times this year	9.7	9.3	10.5

These two tables indicate that students were much more likely to be involved in the physical moving of furniture than they were in planning its arrangement. Well over half the students at both levels were never involved in planning, while a quarter of all students had never helped to move furniture. Approximately half the students had helped move furniture at school at least twice during the year. Boys were more likely than girls to have helped move furniture at school.

b. Rearrangement of Tables by Teachers:

"Experiment with furniture."

K-6 Teacher

Table 114: Distribution Of Teachers By Frequency Of Rearranging Tables

	LEVEL		
	K-6	7-9	
		Type of Space	
Frequency	All	Open	Enclosed
Never	3.9	3.8	16.7
Once a year	9.1	3.8	13.6
2 - 3 times a year	32.1	37.5	25.8
4 or more times a year	54.9	55.1	43.9
N	(308)	(80)	(66)

Teachers reported moving the tables more frequently than the students reported moving furniture. Predictably, K-6 teachers and 7-9 teachers in open areas were much more likely to rearrange tables than 7-9 teachers in enclosed areas.

c. Rearrangements of Storage Containers by Teachers:

Table 115: Distribution Of Teachers By Frequency Of Rearranging Storage Containers

	LEVEL		
	K-6	7-9	
		Type of Space	
Frequency	All	Open	Enclosed
Never	19.7	23.2	42.4
1 - 2 times a year	38.5	49.3	42.4
3 or more times a year	41.8	27.5	15.2

Storage containers were moved less frequently than tables. Forty-two per cent of K-6 teachers, 27% of open area 7-9 teachers, and 15% of enclosed area 7-9 teachers, moved them three or more times a year.

d. Rearrangement of Shelves by Students and Teachers:

Table 116: Distribution Of Students By Frequency Of Moving Shelves

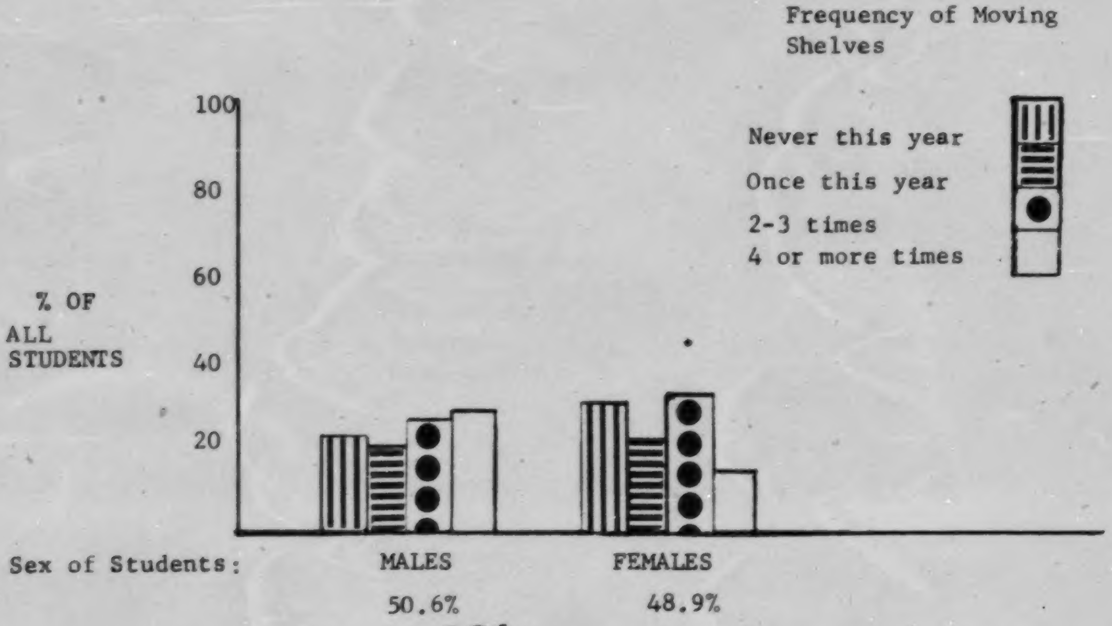
Frequency	% Overall	% K-6	% 7-9
Never	57.4	56.1	61.1
Once this year	19.3	20.5	18.2
2 - 3 times this year	14.1	15.3	12.9
4 or more times this year	7.9	8.1	7.8
N	(966)	(570)	(396)

Table 117: Distribution Of Teachers By Frequency Of Rearranging Shelves

Frequency	% Overall	% K-6	% 7-9
Never	40.1	36.7	46.5
1 - 2 times this year	35.7	37.7	32.1
3 - 5 times this year	14.6	14.0	15.7
6 or more times this year	9.6	11.7	5.7
N	(459)	(300)	(159)

Shelves were moved less frequently than either tables or storage containers. Teachers were somewhat more likely to move shelves than students. However, well over a half of the students and a third of the teachers had never moved a shelf. Boys were more likely than girls to have moved shelves at school. See Chart 29.

CHART 29: Distribution Of All Students By Sex AND By Frequency Of Moving Shelves



e. Changing Doors on Casework By Teachers: Doors for SEF containers can be added and will hinge from either side. The data is derived only from teachers who had doors which could be changed.

Table 118: Distribution Of Teachers By Frequency Of Changing Doors On Casework (Bookshelves, Cupboard Or Storage Bins)

Frequency	% Overall	% K-6	% 7-9
Never	75.3	76.3	73.1
Once this year	11.0	10.7	11.8
2 or more times this year	13.6	13.0	15.1
N	(308)	(215)	(93)

Three-quarters of all teachers had never changed any door on their SEF furniture during the school year.

f. Student and Teacher Use of Folding Walls: Only a third of all the teachers had folding or sliding walls. Only those students and teachers who had moveable walls in their areas were included.

> "I don't think it's much fun because we never open our walls but I think the open area is fun because sometimes classes get together and watch movies."
>
> K-6 Student

Table 119: Distribution Of Teachers By Frequency Of Opening Or Closing A Folding Wall In Their Teaching Area

Frequency	% Overall	% K-6	% 7-9
Never	55.6	56.8	52.2
Once this year	13.5	15.9	6.5
2 - 5 times this year	10.1	12.1	4.3
6 or more times this year	20.8	15.2	37.0
N	(178)	(132)	(46)

Teachers were more likely to open or close the folding walls than were students. Three-quarters of K-6 students and two-thirds of 7-9 students had never moved a folding wall at school. Even among the teachers who had folding walls, over half had not used them. The open area 7-9 teachers used them least of all.

Although many teachers request the flexibility of being able to open or close a wall at will, the present evidence is that most folding walls are infrequently used.

IN SUMMARY, teachers rearranged furniture more than students. There was some student involvement in moving furniture, but minimal involvement in planning its arrangement. Tables were moved more frequently than storage containers, storage containers more frequently than shelves, shelves more frequently than doors on casework. A large majority of teachers seldom changed doors on casework. Folding walls were also being used relatively infrequently. Boys were more likely than girls to have moved furniture and shelves.

6. Student Use Of Audiovisual Materials

a. Student and Teacher Reporting on Film, Slides and Filmstrips, Audio Equipment and Television Usage: Students were asked how often they viewed films, slides and filmstrips, used audio equipment or watched television in school. Teachers were asked similar questions about the students' use of media in their teaching areas. It should be pointed out that students are reporting only for themselves, whereas teachers are reporting for all the students in their teaching area.

Table 120: Distribution Of Students By Frequency Of Viewing Films In School

Frequency Of Viewing	% Overall	% K-6	% 7-9
Never	6.0	5.7	6.7
Less than once a month	37.1	35.2	40.9
1 - 2 times a month	32.1	34.5	29.7
3 or more times a month	23.6	24.7	22.7
N	(967)	(566)	(401)

Table 121: Distribution Of Teachers By Reported Frequency Of Students Viewing Films

Frequency Of Student Viewing	% Overall	% K-6	% 7-9
Never	15.9	15.4	16.7
Less than once a month	23.6	17.9	33.3
1 - 2 times a month	22.6	19.9	27.2
3 or more times a month	38.0	46.8	22.8
N	(492)	(312)	(180)

Slightly more K-6 than 7-9 students reported viewing films at school. Almost a quarter of the students at both levels viewed films at least three or more times a month.

The responses from 7-9 teachers were similar to those of the 7-9 students but at the K-6 level, twice as many teachers as students reported frequent use of films (47% vs 25%).

Table 122: Distribution Of Students By Frequency Of Viewing Slides And Filmstrips In School

Frequency Of Viewing	% Overall	% K-6	% 7-9
Never	11.9	14.1	9.0
Less than once a month	39.2	38.1	42.4
1 - 2 times a month	29.7	29.9	30.7
3 or more times a month	17.6	18.0	18.0
N	(963)	(562)	(401)

Table 123: Distribution Of Teachers By Reported Frequency Of Students Viewing Slides And Filmstrips

Frequency Of Student Viewing	% Overall	% K-6	% 7-9
Never	14.4	10.7	20.7
Less than once a month	21.7	15.9	31.5
1 - 2 times a month	22.5	23.3	21.2
3 or more times a month	41.4	50.2	26.6
N	(493)	(309)	(184)

There was little difference between levels in student reporting of slide and filmstrip viewing. Approximately half used slides and filmstrips more than once a month, 18% using them three or more times a month. But at the K-6 level, half of the teachers reported that their students viewed slides and filmstrips at least three times a month. Twenty per cent of 7-9 teachers indicated that students never viewed slides or filmstrips in their area, compared to 9% of students at that level.

More male teachers reported frequent student use; 1 in 5 of the male teachers said their students viewed slides or filmstrips five or more times a month. One quarter of the female teachers reported that their students "never" used slides or filmstrips.

Table 124: Distribution Of Students By Frequency Of Using Audio Equipment, (Tape Recorders, Record Players Or Listening Stations) At School

Frequency Of Use	% Overall	% K-6	% 7-9
Never	24.2	24.0	25.2
Less than once a month	32.7	29.2	38.7
1 - 2 times a month	21.6	25.4	16.7
3 or more times a month	20.3	21.4	19.5
N	(967)	(566)	(401)

Table 125: Distribution Of Teachers By Reported Frequency Of Students Using Audio Equipment

Frequency Of Student Use	% Overall	% K-6	% 7-9
Never	15.4	8.7	26.6
Less than once a month	19.8	13.5	30.4
1 - 2 times a month	11.5	10.0	14.1
3 or more times a month	53.3	67.7	28.8
N	(494)	(310)	(184)

More K-6 students than 7-9 students reported using audio equipment at least on a monthly basis (47% vs 36%). Teachers were much more likely than students to report heavy usage, the trend being more pronounced at K-6 level. Two-thirds of the K-6 teachers, compared to one-fifth of the K-6 students said students used audio 3 or more times a month.

Table 126: Distribution Of Students By Frequency Of Viewing Television At School

Frequency Of Viewing	% Overall	% K-6	% 7-9
Never	44.9	38.3	55.9
Less than once a month	32.3	29.2	37.8
1 - 2 times a month	9.6	13.1	5.0
3 or more times a month	11.8	19.4	1.6
N	(966)	(566)	(400)

Table 127: Distribution Of Teachers By Reported Student Use Of Television

Frequency Of Student Viewing	% Overall	% K-6	% 7-9
Never	60.4	53.3	72.7
Less than once a month	22.5	21.9	23.5
1 - 2 times a month	6.2	8.3	2.7
3 or more times a month	10.8	16.5	1.0
N	(498)	(315)	(183)

Television was not being widely used in SEF schools; 67% of K-6 students and 93% of 7-9 students watched it less than once a month at school.

Teachers generally reported more use of most other media than did students. With television, the teachers' perceptions were much closer to the students' perceptions, in this instance they even reported slightly less frequent use than did students.

> "Underutilization of audiovisual resources may be attributable to the lack of a good catologue with a useful subject index."
>
> 7-9 Teacher

IN SUMMARY, in general K-6 students reported more frequent usage than 7-9 students. Approximately one-fifth of all the students reported frequent usage of most media, the single exception was television; only 1% of 7-9 students used it three or more times a month. Television was the least used medium; a very large proportion of students used it less than once a month. Students reported more use of film than any other medium. Teachers were much more likely than students to report more frequent student use. In particular, K-6 teachers reported heavy use of slides and filmstrips and audio equipment.

b. Comparison with Metro-wide Survey: A 1972 survey[1] of 164 randomly selected schools in Metropolitan Toronto provided comparative data to teachers' reported student usage.

K-6 teachers in this study reported slightly more student use of film, and more use of television, but the Metro sample reported more student use of slides and filmstrips, and audio equipment.

Teachers at the 7-9 level also reported more use of film, less student use of audio and slightly less use of slides and filmstrips, and television than the sample of Metro teachers.

c. AV Use Scale: The responses to the four questions on the use of media were combined for the students and for the teachers into two AV use scales. On each scale the scores were assigned to three categories of usage: high, medium and low.

Table 128: Distribution Of Students By AV Use Scale

AV Scale	% Overall	% K-6	% 7-9
Low Use	22.5	20.8	24.7
Medium Use	66.6	63.8	70.5
High Use	10.9	15.4	4.8
N	(944)	(547)	(397)

K-6 students were three times as likely as 7-9 students to fall in high use category (15% vs 5%).

Table 129: Distribution Of Teachers By AV Use Scale

AV Scale	% Overall	% K-6	% 7-9
Low Student Use	16.4	7.9	30.9
Medium Student Use	53.7	50.7	59.0
High Student Use	29.9	41.4	10.1
N	(482)	(304)	(178)

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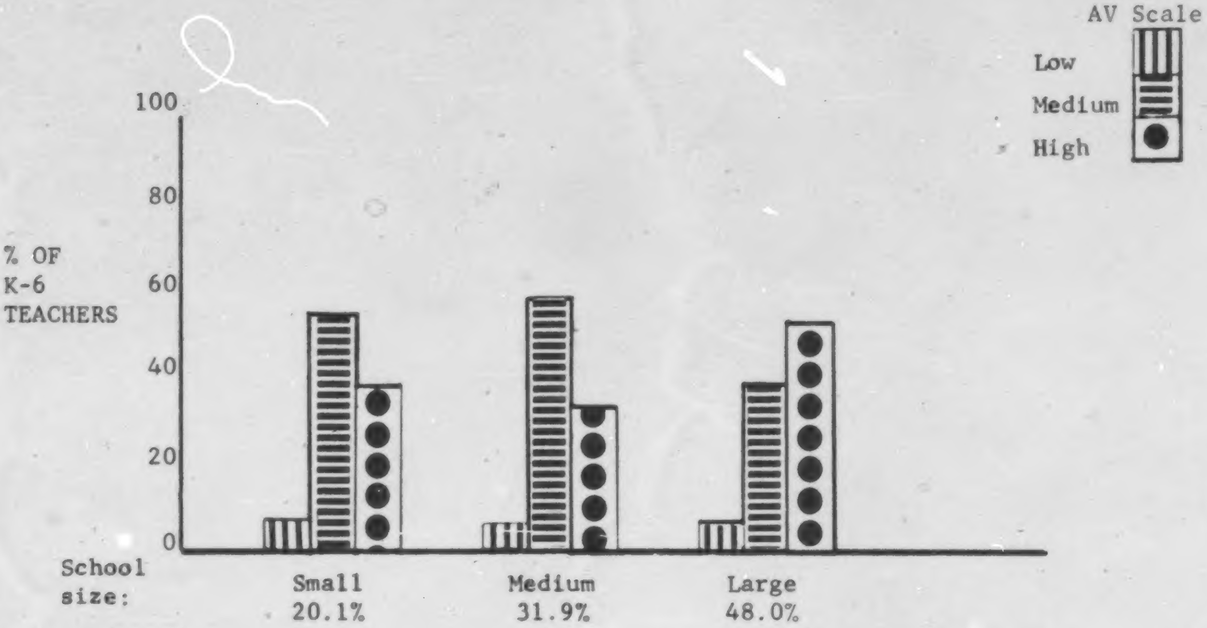
[1] Metropolitan Toronto School Board, ETV Committee, "In-School Media Use Survey", in cooperation with the Ontario Educational Communication Authority, (Toronto, 1972).

K-6 teachers were four times as likely as 7-9 teachers to fall in the high AV use category (41% vs 10%); nearly one-third of 7-9 teachers were in the low use category.

Relationships between these AV Use Scales and other variables were examined. Those regarded as significant are discussed in this section.

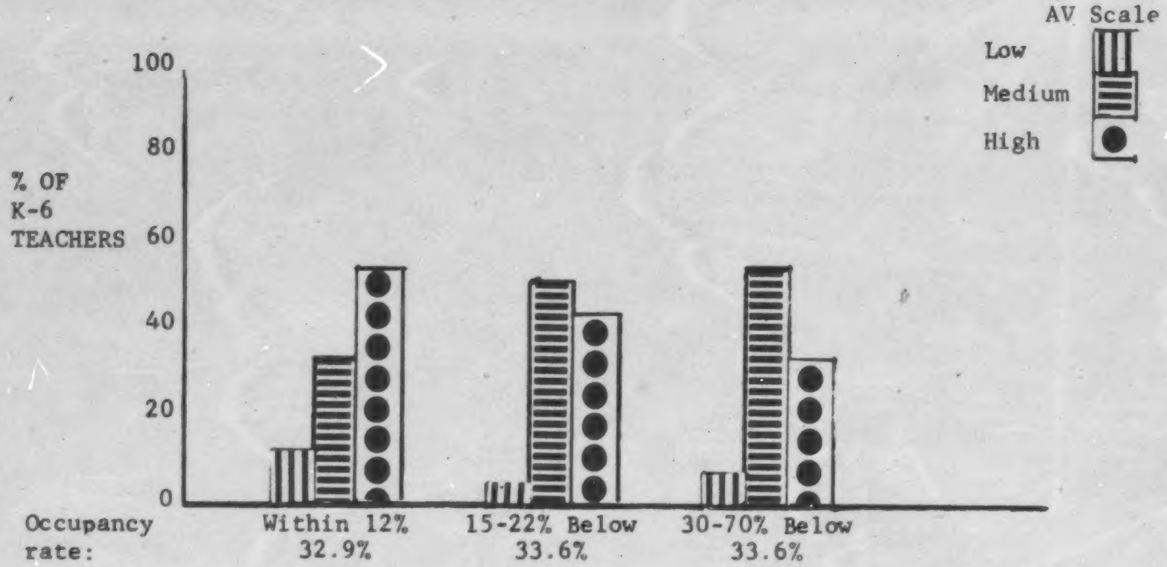
(i) AV Use Scale and School Characteristics: One-third of the students in the fast growing schools compared to 11% of all students, fell into the low use category. K-6 teachers in large schools were more likely than those in other schools to report their students were in the high AV use category. See Chart 30.

CHART 30: Distribution Of K-6 Teachers By
Size Of School AND AV Scale



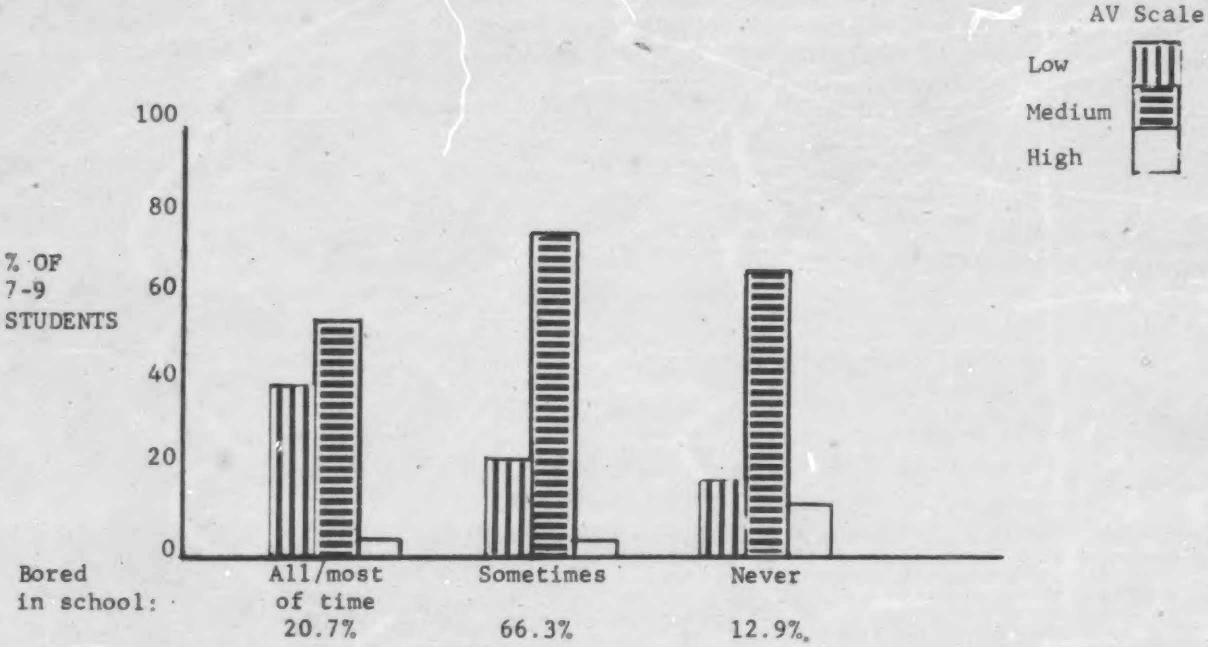
K-6 teachers in schools which were well below rated capacity (30-70% below) were less likely than those in schools closer to rated capacity to report high levels of AV use by students. (Chart 31)

CHART 31: Distribution Of K-6 Teachers By Rated Occupancy AND AV Scale



(ii) AV Use Scale and Student Characteristics: 7-9 students who were frequently bored and those who never liked going to school were more likely than other 7-9 students to be in the low AV use category (40% vs 25%). The close relationship between high AV use and freedom from boredom are illustrated in Chart 32.

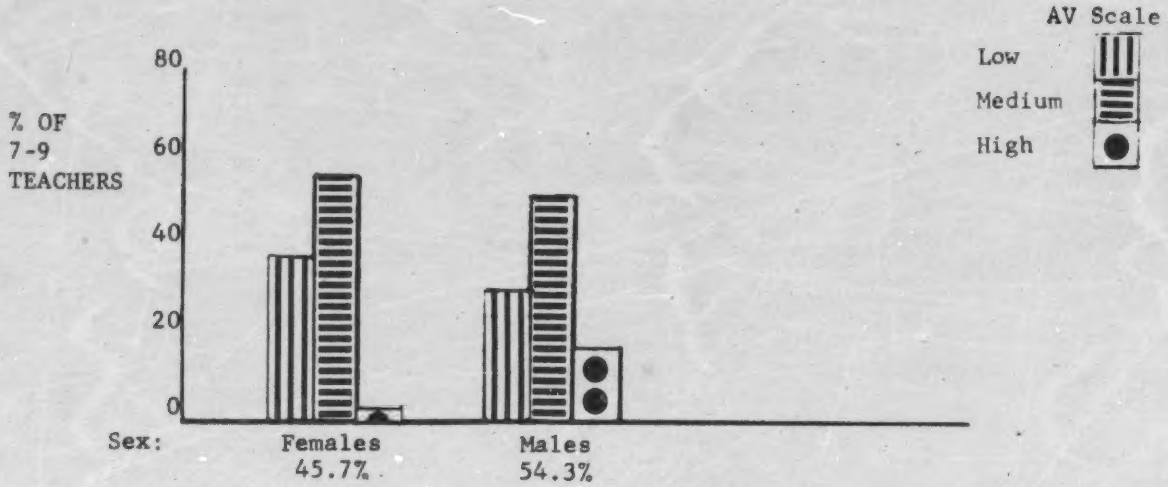
CHART 32: Distribution Of 7-9 Students By Frequency Of Boredom AND Student AV Scale



A surprising finding was that K-6 students who never liked working in open areas were also more likely to be in the high AV use category.

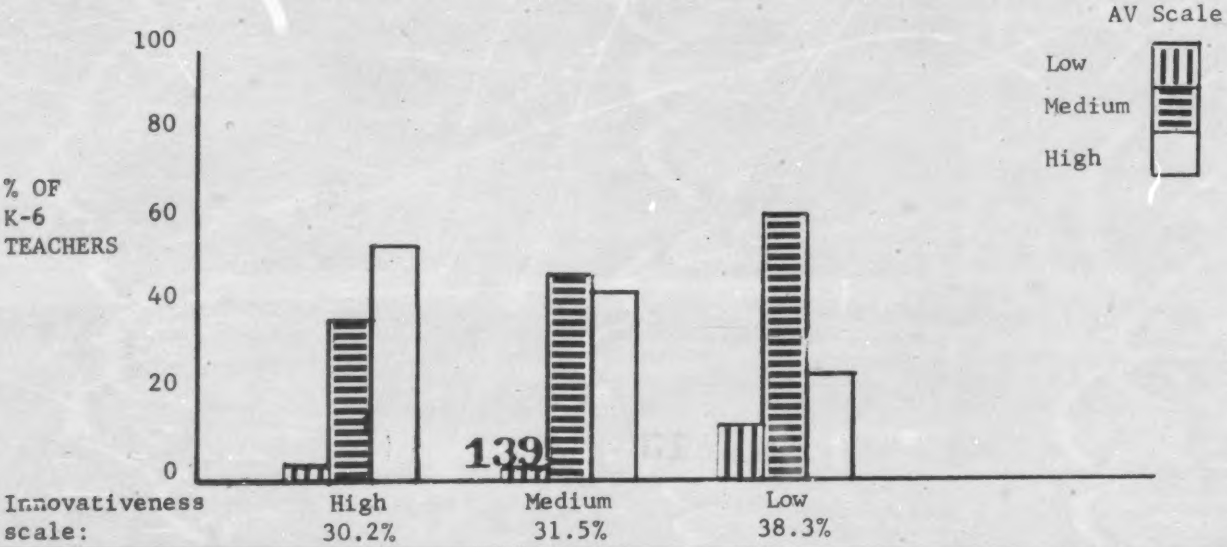
(iii) AV Scale and Teacher Characteristics: More female teachers than male teachers at the 7-9 level reported low levels of AV use for their students.

CHART 33: Distribution Of 7-9 Teachers By Sex AND AV Scale



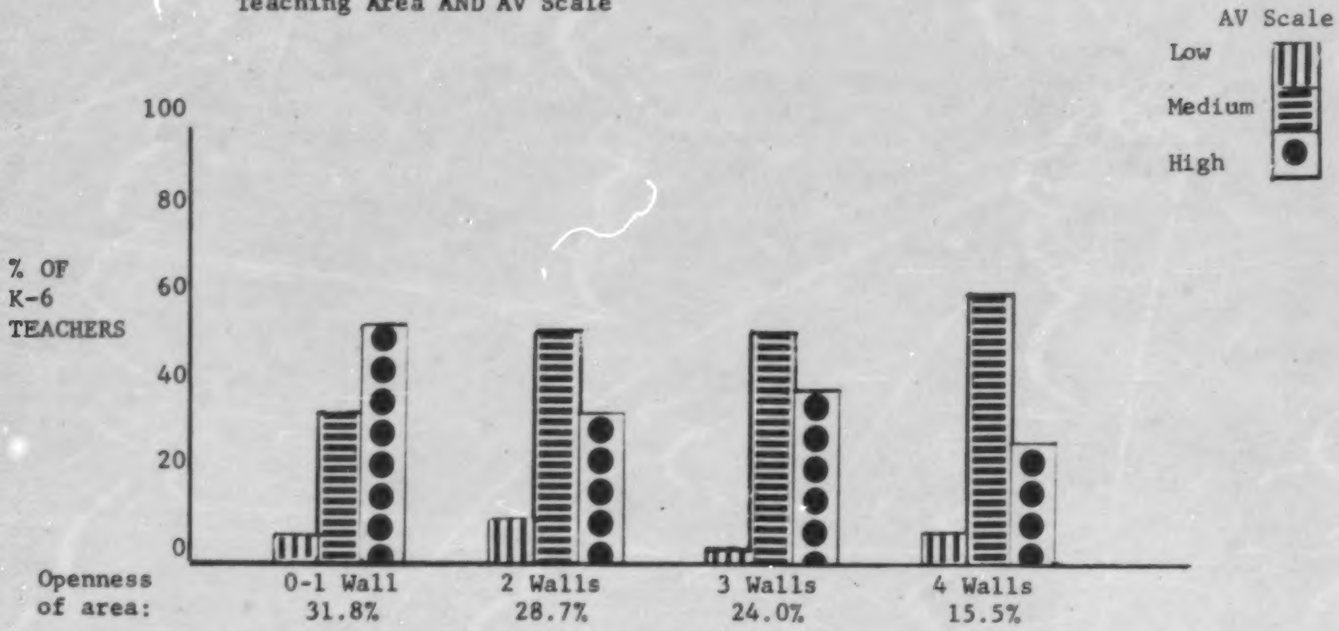
7-9 Teachers who expressed preference for an enclosed teaching space, or who had no preference were likely to report low student use of AV, whereas K-6 teachers who preferred open space tended to report high levels of use. Also, K-6 teachers who had more open area experience and who were high on the Innovativeness Scale were more likely to report high AV use by students. The relationship between reported Innovativeness and reported AV use is shown in Chart 34.

CHART 34: Distribution Of K-6 Teachers By Innovativeness Scale AND AV Scale



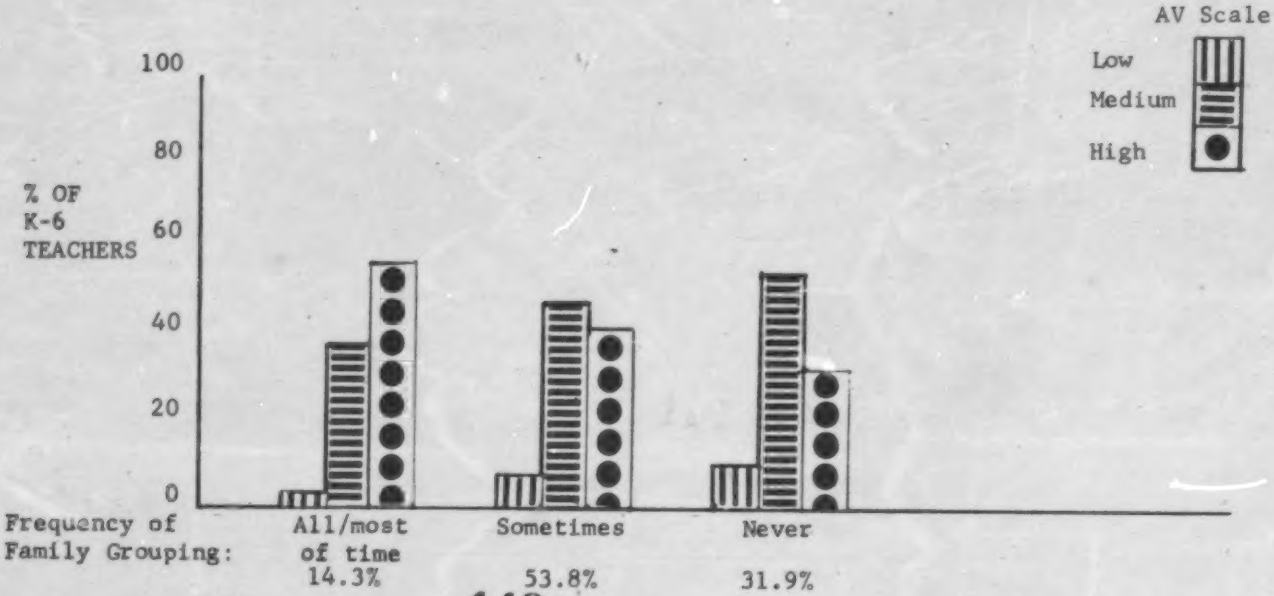
(iv) AV Scale and Working Conditions: 7-9 Teachers in enclosed areas were low on the scale, whereas K-6 teachers who were in most open, open areas (0-1 wall) were high on the scale. See Chart 35.

CHART 35: Distribution Of K-6 Teachers By Openess Of Teaching Area AND AV Scale



(v) AV Use Scale and the Social Environment: More K-6 teachers who used family grouping reported high use levels of AV by students.

CHART 36: Distribution Of K-6 Teachers By Frequency of Family Grouping AND AV Scale



IN SUMMARY, students in fast growing schools, 7-9 students who were bored and who "never" liked going to school reported low levels of media usage. Teachers who reported low student use levels of AV were more likely to be female than male (7-9), to have no preference about type of area or to prefer enclosed areas (7-9), and to be presently teaching in enclosed areas.

Those who reported high levels of use by students tended to be K-6 teachers, to be in large schools, to be in low occupancy schools, to prefer open areas (K-6), to be working in the most open, open areas (0-1 wall) and to have had more open area experience. However, students who "never" liked working in open areas reported high levels of media use.

CHAPTER 9

LIBRARY RESOURCE CENTRE

"The hub of learning," "the focal point of the school," "the heart of the curriculum," these are recurrent themes in the literature on both open plan schools and on open education. The SEF educational reports[1] assigned to the library resources centre "the key educational function of providing the materials needed in developing concepts and skills and of offering guidance in the use of these materials."[2] Despite this emphasis in the literature on libraries for open plan schools, very little of the research on open plan schools has investigated the use of the library.[3]

Throughout this chapter the shortened term "library" has been used, as synomous with "Library Resource Centre" and "School Resource Centre". They are defined as:

> "The place (or complex of places) in a school where learning materials in many media are assessed, ordered, received, (or alternatively, are produced), stored and made available for use."[4]

In this chapter the SEF libraries and librarians are described, student satisfaction with the library is discussed, and the frequency of teacher and student use of the library is given. The significant interrelationships between library variables and other variables are shown in charts.

1. Description of SEF Libraries

The libraries in SEF schools vary in terms of location, openness, and elaborateness of facilities. Most are located on the second floor, except for five K-6 schools. In the latter a ground floor is intended to facilitate community use. Most of the libraries are adjacent to teaching areas. Seven K-6 and four 7-9 schools have libraries which are completely enclosed architecturally.

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[1] See p. 2 for specific citations on E1, E2 and E3.

[2] E 2, p. 74.

[3] Exceptions are Cheek, Fulk, Metropolitan Toronto School Board, Traub, and others, Wiedrick and York County (Thornlea). See Bibliography of Research on Open Plan Schools, Appendix V, pages 248-258 for specific references.

[4] Association for Media and Technology in Education in Canada, and Canadian School Library Association, "Learning Materials Services: Principles and Practices in Canadian Schools," 1974. (Typewritten draft)

The libraries in the remaining schools are open to some extent with one, two or three walls. The large majority have a library office and workroom, and most also have AV seminar rooms and/or preparation rooms. Most libraries have from one to four seminar rooms, but frequently these are scheduled for other uses. Only two schools have no seminar rooms associated with the library.

The SEF reports, E1 and E2, recommended that libraries should be able to seat at any one time 15% of the total enrolment at the K-6 level @ 35 square per student, and 20% at the 7-9 level. The Ministry of Education in their publication School Media Centres stated that "for the purpose of arriving at the approved cost, the net functional floor area for a media centre shall be determined on the basis of five square feet per pupil of total school enrolment."[1]

The libraries in the SEF schools range in size: for K-6, from 2,575 to 5,670 square feet, and for 7-9, from 3,400 to 5,770.

The actual area per student[2] was determined. Six of the seven 7-9 libraries had substantially more than five square feet per student; the range was from 8.05 square feet to 9.24 square feet per student. Seven of the fifteen K-6 libraries also had more than the standard five feet per student; the range was even broader, from 6.73 square feet to 14 square feet per student. Most of the remaining schools, one 7-9 school and 7 K-6 schools had approximately five square feet per student. One inner city school which was at rated capacity has a library with only 3.44 square feet per student.

2. SEF Librarians

Compared to the total teaching staff, librarians tended to be older, have more years of teaching experience, and have had more kinds of inservice training for open plan (especially visits to other schools, and staff meetings). They were above average on the Innovativeness Scale, and split evenly on their preference for open space versus enclosed space.

They tended to dislike the exterior appearance of the school. They were satisfied with the furniture in approximately the same proportion as the rest of the staff, but were more likely to rate the quality of bookshelves inferior. They were much more likely to rate most other environmental features of the school, especially their own teaching area, as superior.

They reported frequent use of all AV media except television and made heavy use of electrical service columns.

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[1] Ontario Department of Education, School Media Centres, (Toronto: 1972), p. 14.

[2] Student enrolment was adjusted by counting only half the junior kindergarten and kindergarten enrolment because they attended school half days only.

"I like the library because it is very big."

"The library is large and not crowded and we watch and listen to tapes, records, filmstrips, etc. It is comfortable on the carpet.

K-6 Students

"I would tell them about the library - how big it is and all the working areas in it. The library is a very reliable source to me. I can find what I want very easily and I can sign things out easily."

7-9 Student

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3. Student Satisfaction With Library

Many more K-6 students than 7-9 students reported liking the library (94% vs 67%). In fact, in four K-6 schools every student reported liking the library.

At the 7-9 level there was a range from 52% to 78% in the proportion of students who liked the library. Only in one school did a sizeable portion (29%) dislike the library: in other schools most of the students who did not report liking the library were neutral about it.

Table 130: Distribution Of Students By Satisfaction With Library Resource Centre

Satisfaction	% Overall	% K-6	% 7-9
Like Library	82.5	93.9	66.8
Neutral/Dislike	17.1	6.1	33.2

4. Teacher And Student Use Of The Library

Students were asked how often they visited the library resource centre with their class, by themselves or in a small group. Teachers were asked how often students from their teaching areas visited the library as a class, and how often they themselves visited the library.

Table 131: Distribution Of Students By Frequency Of Visiting Library With Class

Frequency	% Overall	% K-6	% 7-9
Never	11.7	9.5	15.5
Less than once a week	36.4	29.1	48.1
1 - 2 times a week	36.9	45.7	26.2
3 or more times a week	13.3	15.7	10.2
N	(961)	(560)	(401)

Table 132: Distribution Of Teachers By Their Reporting Of Frequency Of Students Visiting Library As A Class

Frequency	% Overall	% K-6	% 7-9
Never	14.4	9.2	24.5
Less than once a week	30.9	24.4	43.5
1 - 2 times a week	41.9	54.4	17.7
3 or more times a week	12.7	12.0	14.3
N	(430)	(283)	(147)

K-6 students and teachers reported approximately the same frequency of class visits to the library. Less than 10% reported "never", another quarter "less than once a week". More teachers than students reported visits once or twice a week (54% vs 46%). This could reflect the fact that many primary classes are encouraged to visit the library as a class. Over half the kindergarten teachers reported students visiting the library as a class once or twice a week.

In comparison with K-6 students a smaller proportion of 7-9 students reported frequent class visits to the library; in fact, nearly two-thirds of both 7-9 teachers and students reported no class visits or infrequent class visits ("less than once a week").

At the 7-9 level, students who reported daily class visits to the library were also more likely to report that they liked the library (88% compared to 67% of total sample of 7-9 students).

From discussions with individual librarians, teachers and principals, it seems that regular class visits to the library are on the wane. This may be questioned because students who visited the library frequently with their class were also more likely to visit it by themselves and in small groups and to report liking the library. Also students who never visited the library with class were more likely to report never viewing slides and filmstrips (both levels), television (both levels), or films (K-6 level) at school. An Edmonton study of urban open area school libraries also reported that students felt that class visits to the library were valuable.

> "However, while favoring independent use of the library as individuals or in small groups, most students also believed their entire class should attend for a weekly scheduled library period, a point on which they were in disagreement with teachers, librarians and principals, and in strong disagreement with the panel of judges. Students claimed that they favored regular library periods because without them no school time was provided for all students to attend the library to select and read books for pleasure."[1]

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1. Laurence George Wiedrick, "Student Use of School Libraries In Edmonton Open Area Elementary Schools", (D.Ed. Dissertation, University of Oregon, 1973), p. 202.

Table 133: Distribution Of Students By Frequency Of Visiting Library Alone Or In Small Groups

Frequency	% Overall	% K-6	% 7-9
Never	7.6	9.2	5.5
Less than once a week	26.6	23.2	32.1
1 - 2 times a week	28.9	31.3	26.4
3 or more times a week	35.8	36.2	36.1
N	(967)	(565)	(402)

Students at both levels were much more likely to report visiting the library alone or in small groups than with the class; more than a third reported going three or more times a week alone or in small groups whereas only about 15% reported this frequency for visiting the library as a class. K-6 students appear somewhat more likely than 7-9 students to visit library once or twice a week by themselves or in small groups (31% vs 26%).

"Most of the teachers are nice and let you go to the library if you have finished your work."

"In the library especially it is nice because whenever you want to work on your own that is the place to go."

"I like the library at the end of the hall and the open space because the way it is set up you are quite close to most things and the kids can feel free to use the library."

7-9 Students

Table 134: Distribution Of Teachers By Frequency Of Visiting Library

	LEVEL		
	K-6	7-9	
		Type of Space	
Frequency	All	Open	Enclosed
Less than once a week	24.9	18.8	48.9
1 - 2 times a week	32.2	26.3	21.6
3 - 4 times a week	23.6	16.3	14.8
Daily or several times a day	19.2	38.8	14.8
N	(300)	(80)	(88)

"Get to know your librarian and find out how the resource centre is going to be used."

K-6 Teacher

Overall, 62 teachers out of 430 said they never visited the library. However, in five of the fifteen K-6 schools, and one of the seven 7-9 schools, all teachers reported visiting the library.

Almost a quarter of the K-6 teachers and half the enclosed area 7-9 teachers visited the library less than once a week. The remaining teachers made fairly intensive use of the library. More 7-9 teachers in open areas used the library on a daily basis (39%) than K-6 teachers (19%) or 7-9 teachers in enclosed areas (15%).

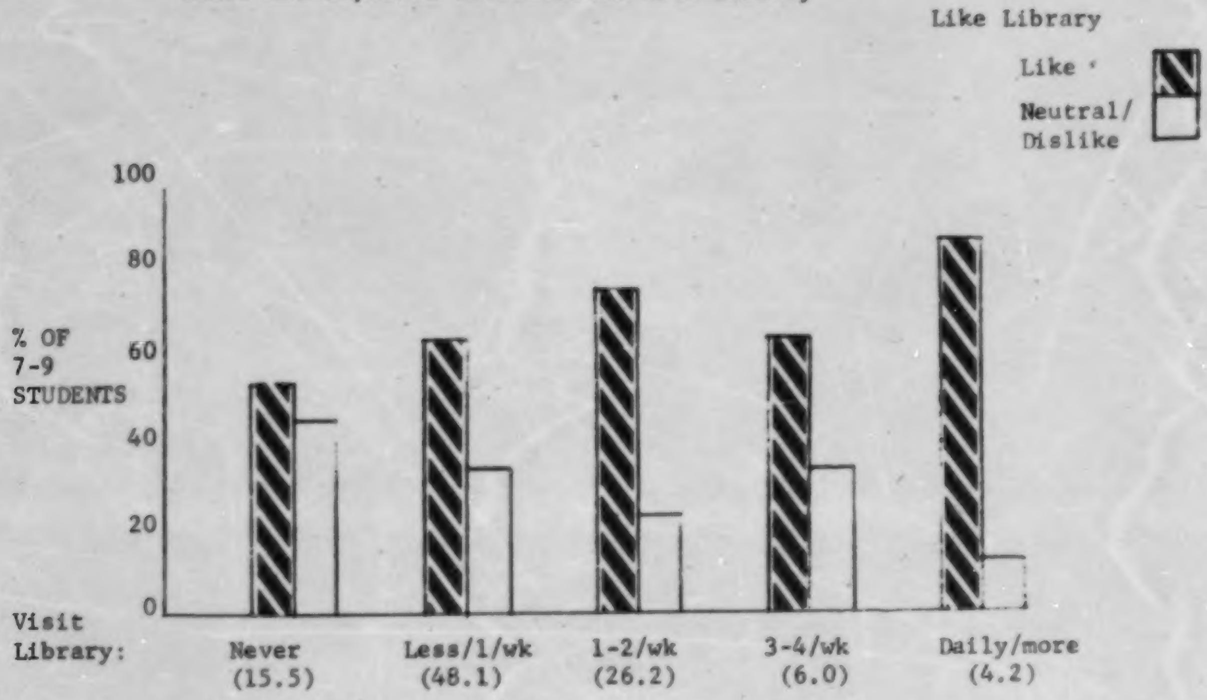
Patterns of library use by teachers varied widely from school to school. In two K-6 schools and four 7-9 schools from 60 - 80% of the teachers reported using the library less than once a week. In five K-6 schools over 80% of the teachers visited the library 1 - 2 times a week and in three more K-6 schools over 50% reported this frequency. In other schools, there was no consistent pattern.

5. Significant Interrelationships Of Library Variables With Other Variables

The four library variables (like library, frequency of student visits to library as a class or as individuals, and teachers visits to library) were related to a host of other variables. These were not always consistent at both levels. Only the most striking relationships are discussed and illustrated.

(a) Satisfaction with Library: - At both levels students who liked the library visited the library more frequently both with their class and by themselves. (Illustrated for 7-9 level and class visits in Chart 37).

CHART 37: Distribution Of 7-9 Students By Visit Library With Class AND Reported Satisfaction With Library



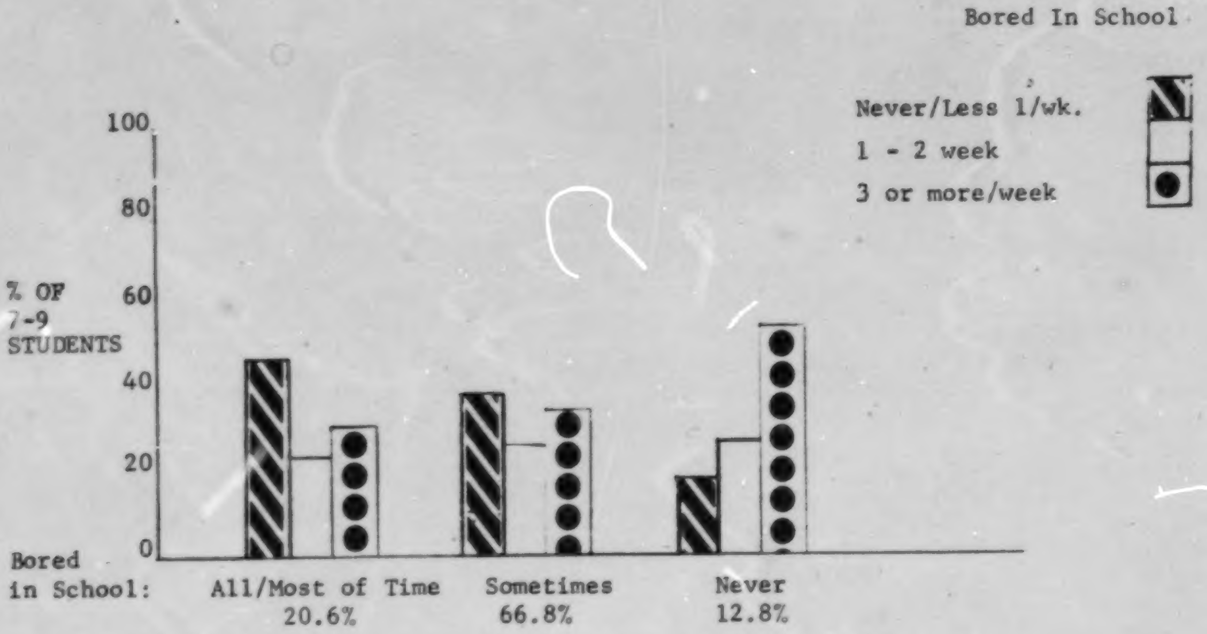
They also tended to like going to school (both levels), working in open areas (K-6 only), and to be never bored in school (K-6 only).

K-6 students who disliked the library tended to be in schools which had low DISC scores,[1] or low occupancy rates. They also were more likely to have attended five or more schools.

(b) Frequency of Visiting Library: - Students at both levels who reported daily class visits also reported more visits to the library by themselves or in small groups.

Students who visited the library alone or in small groups were more likely to report a lack of boredom and a greater frequency of independent work (see Charts 38 and 39.)

CHART 38: Distribution Of 7-9 Students By Visit Library Alone/In Small Groups AND Frequency Of Being Bored In School



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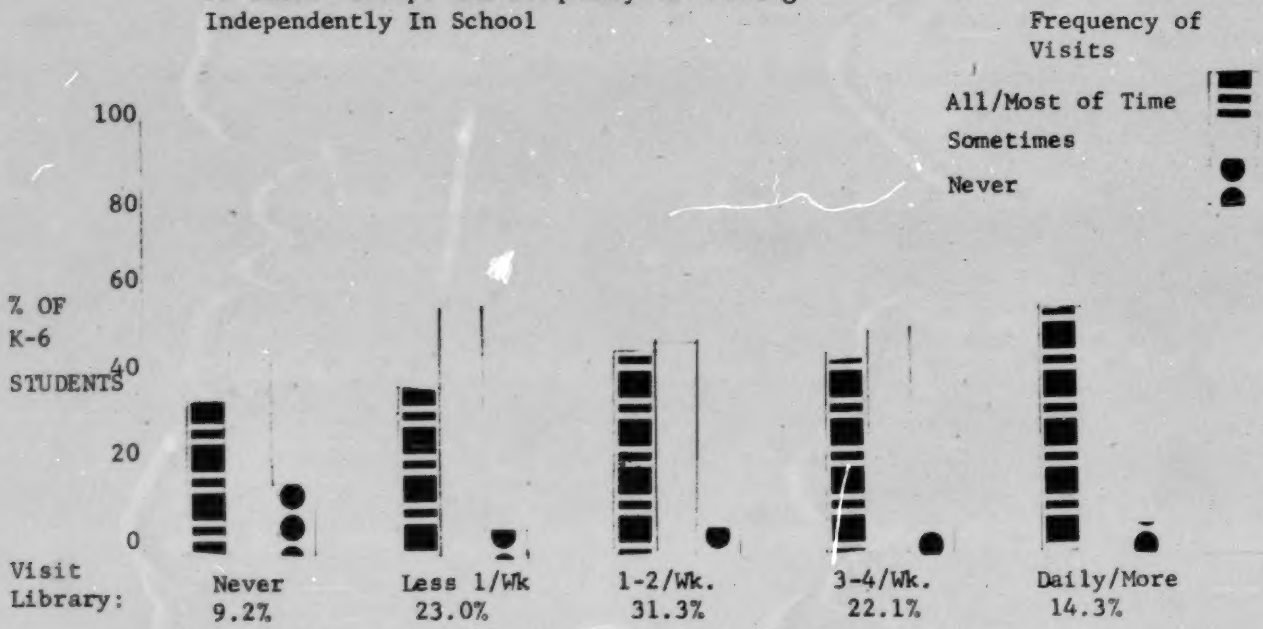
[1] See Glossary.

CHART 39: Distribution Of K-6 Students By Visit Library Alone/ In Small Groups AND Frequency Of Working Independently In School



Generally speaking, students who never visited the library either with their class or by themselves also tended to use audiovisual equipment less frequently. This tendency is illustrated for slides and filmstrips (Chart 40) and for audio equipment (Chart 41).

CHART 40: Distribution Of K-6 Students By Visit Library With Class AND Frequency Of Viewing Slides/ Filmstrips In School

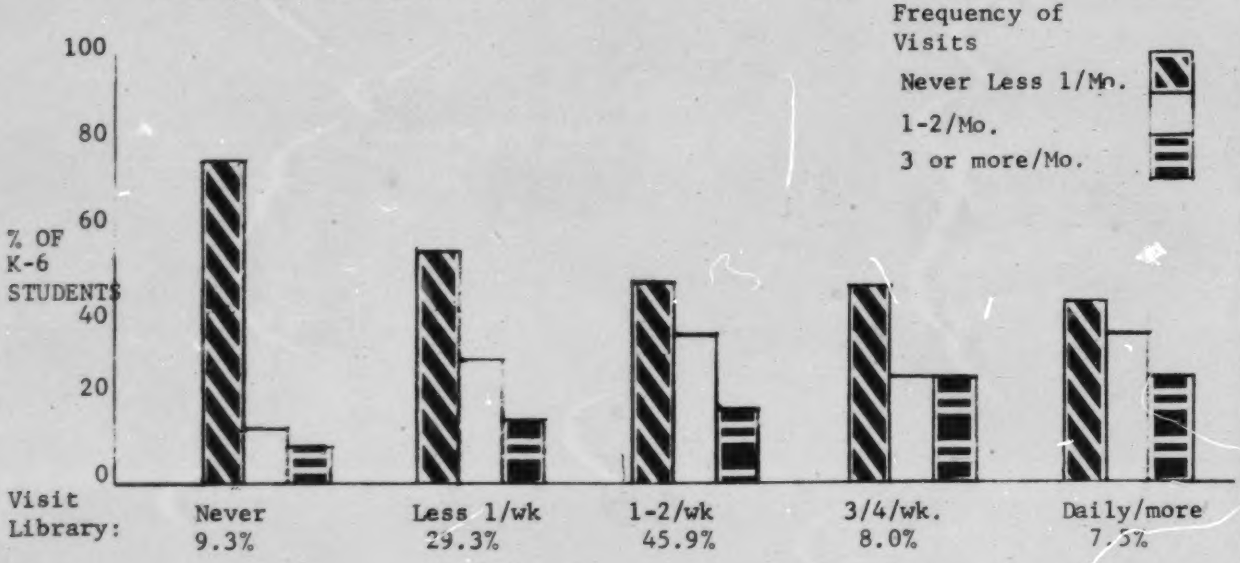
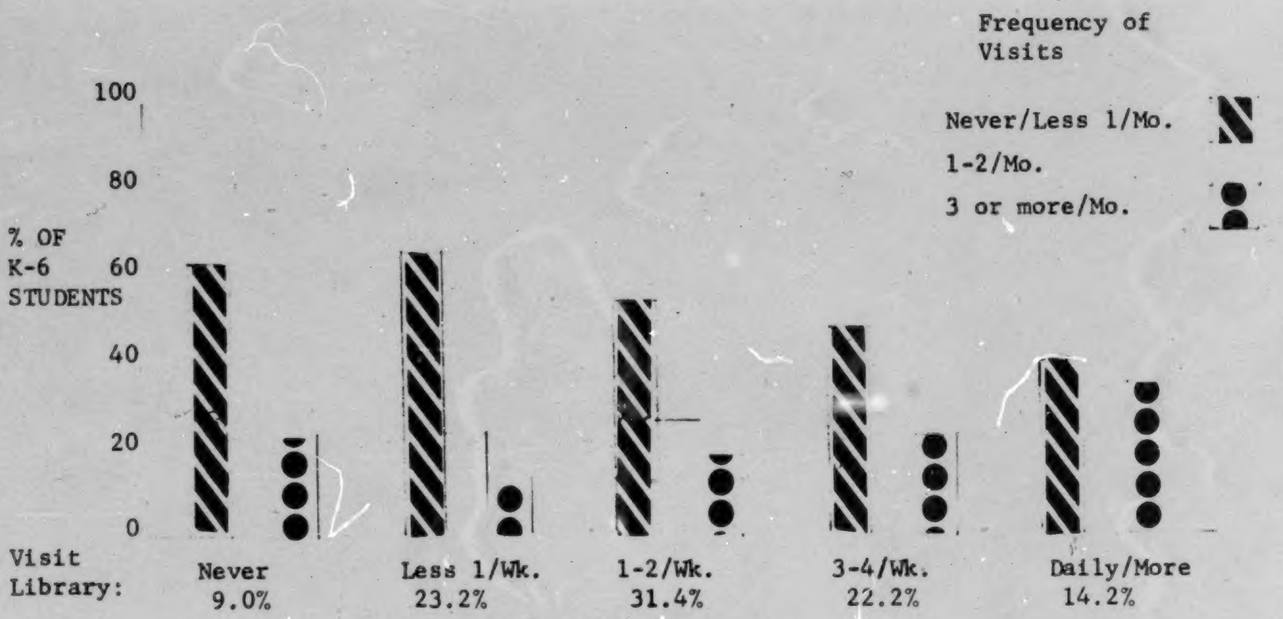


CHART 41: Distribution Of K-6 Students By Visit Library Alone/In Small Groups AND Frequency Of Using Audio In School



At the 7-9 level there were no significant differences by school district income for student use.

While Wiedrick's "study data were judged to be inconclusive on the effect which income level had on library use,"[1] the SEF data showed strong relationships at K-6 level. A larger proportion of K-6 students in schools in low income districts (66% vs 55% of K-6 students in medium-high SES schools) visited the library with their class more than once a week. However, individual or small group visits were less frequent; 31% of K-6 students in low SES schools, compared to 48% in medium-high SES schools, visited the library three or more times a week. Apparently K-6 teachers in low SES schools were making a point of taking their students to the library. As visiting the library as a class was related to visiting the library individually it seems that students in low SES schools would be using the library much less on their own if teachers were not encouraging the use.

In addition, infrequent class visits to the library (less than once a week) were characteristic of large schools and schools with relatively stable enrolment. On the other hand, frequent class visits (3 or more a week) were more likely to occur in schools with high DISC scores and in schools whose enrolment had increased quickly.

Teachers at both levels who reported infrequent class visits tended to be teachers in enclosed areas.

(c) Teachers Use of Library: - Teachers at K-6 level who used the library on a daily basis tended to be in schools with low occupancy rates, small but relatively stable enrolments, and in school districts which had a medium to high average income. They also tended to have high DISC scores.

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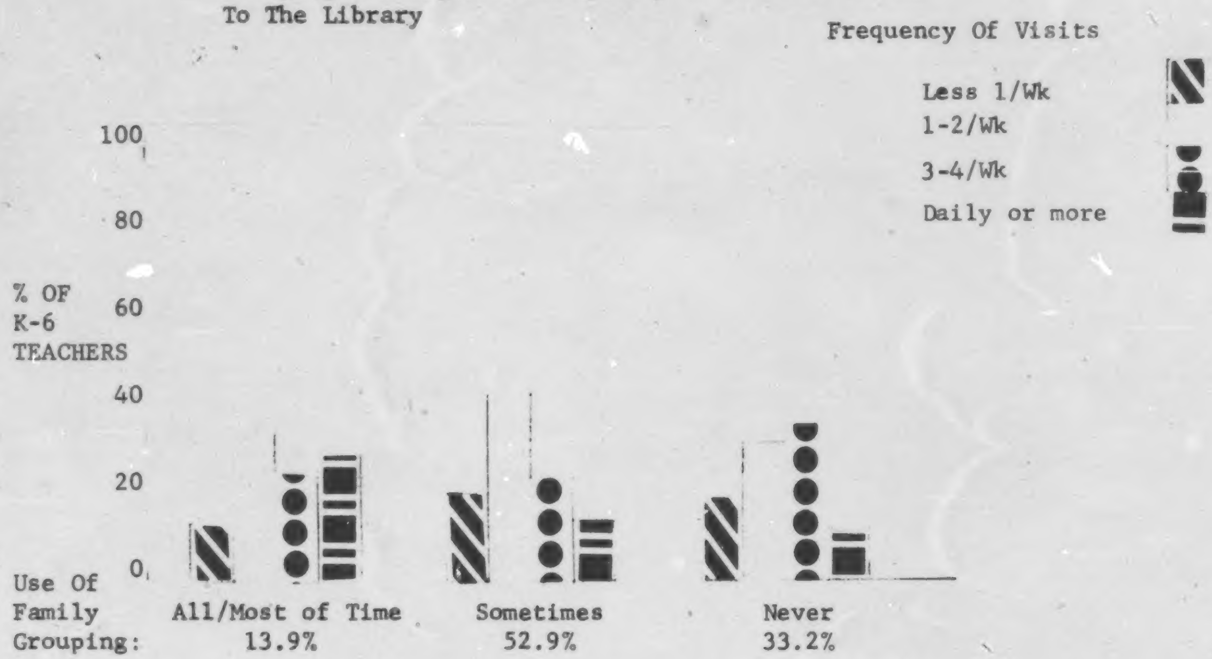
[1] Wiedrick, Op. Cit., p. 207.

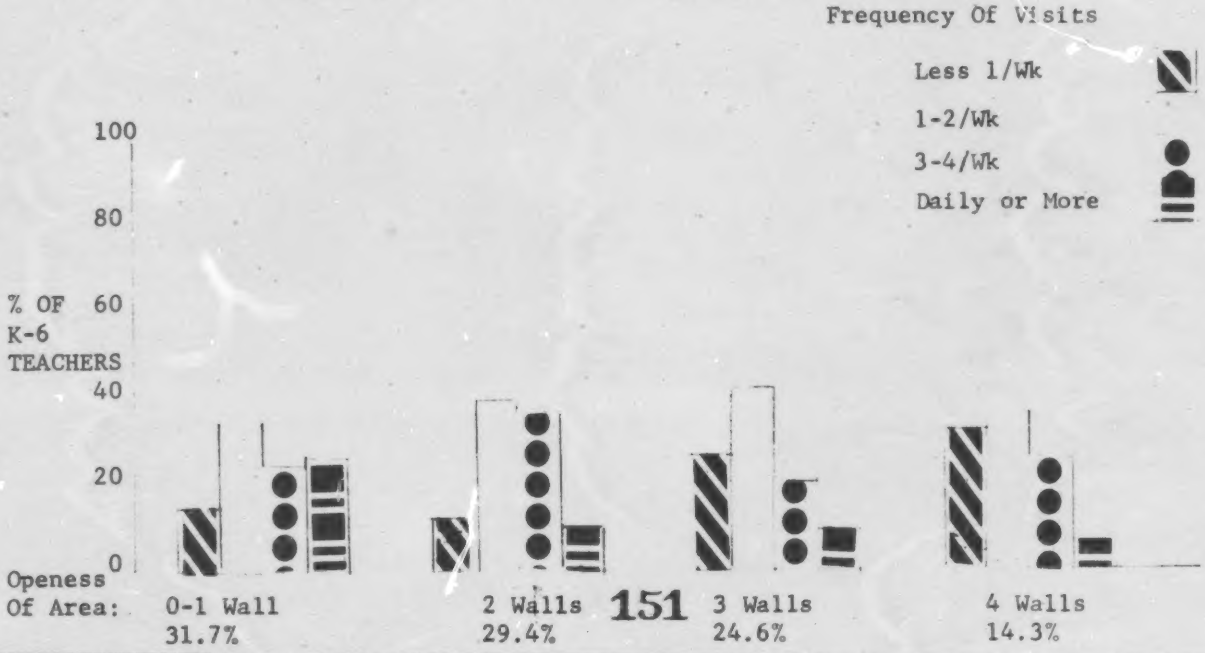
K-6 teachers who were teaching more than one grade level and were using family grouping on a frequent basis (see Chart 42) also tended to visit the library daily.

CHART 42: Distribution Of K-6 Teachers By Frequency Of Family Grouping AND Reported Frequency Of Teacher Visits To The Library



In addition, at both levels, teachers who were in the most open areas (0 - 1 wall) made more use of the library.

CHART 43: Distribution Of K-6 Teachers By Openness Of Teaching Area AND Reported Frequency Of Visiting The Library



IN SUMMARY, the library was much more popular among K-6 students than among 7-9 students. The large libraries are being used. Use varies from school to school and from level to level. K-6 students were more likely than 7-9 students to visit the library with their class. Students at both levels were more likely to visit the library alone or in small groups than with their class. However, students who reported frequent class visits, were also more likely to report more frequent visits by themselves or in small groups. A higher proportion of 7-9 teachers in open areas used the library on a daily basis than did their colleagues in enclosed areas, or than K-6 teachers.

CHAPTER 10

FINDINGS RELATED TO SCHOOL CHARACTERISTICS

In this chapter the interrelationships between school characteristics and the teachers' and students' answers are discussed. The school factors considered are: size of school, rate of occupancy, rate of growth of enrolment, length of time school had been operating, and average household income of each school district.

1. School Size

The schools included in the study ranged in size from 199 to 991. The distribution of schools across size categories is reproduced in Table 135.

Table 135: Distribution Of Schools By Level And Size

Size Of Enrolment	All	Level K-6	7-9
Small (199 - 509)	8	5	3
Medium (547 - 666)	8	5	3
Large (717 - 991)	6	5	1

At both levels small schools were growing rapidly while the large schools were within 12% of rated capacity.

Students in small schools were more likely to report that they often found other students friendly. They were also more likely to report working with more than 25 other students on an average day. But in large schools students were more likely to report working in small groups and that they never used seminar rooms. These patterns of results were apparent at both school levels.

Teachers in small schools were more likely to report that they frequently had access to seminar rooms. But the dramatic findings were related to large schools. Teachers in large schools were consistently more negative than those in small schools in their evaluation of several significant aspects of working conditions and physical environment. Specifically they were more critical of the roominess of their teaching area, the level of privacy for themselves and their students, the appearance of the school's interior, and the architectural layout of the school. They were also more concerned about the importance of windows. The foregoing was true of teachers in both K-6 and 7-9 level schools. Readers are reminded that there were strong correlations between school size and both rate of occupancy and school district income.

2. Rate Of Occupancy

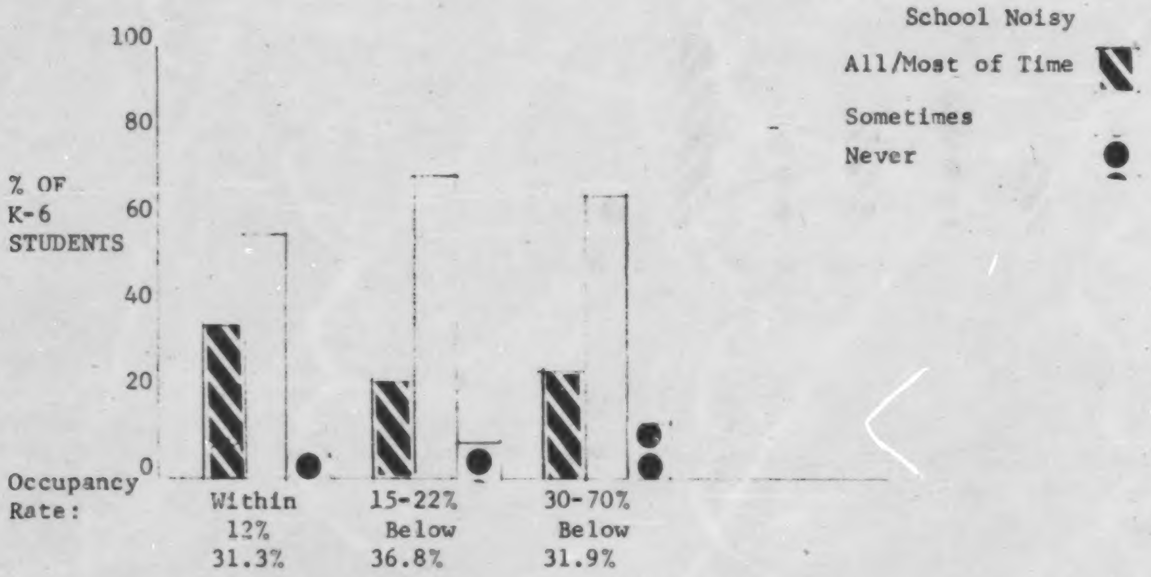
The measure was obtained by calculating the percentage of the rated school capacity represented by the current enrolment. Thus a school built to accommodate 600 students with an enrolment of 300 would have a 50% rate of occupancy. The distribution of schools on this criteria is presented in Table 136.

Table 136: Distribution Of Schools By Level AND Rate Of Occupancy

Rate Of Occupancy	All	Level K-6	7-9
High (with 12% capacity)	8	4	4
Medium (15 - 22%)	6	4	2
Low (30 - 70% below capacity)	8	7	1

At both school levels students from schools with high occupancy rates were more likely to report that their school was noisy all or most of the time. The magnitude of this effect is apparent in the chart below.

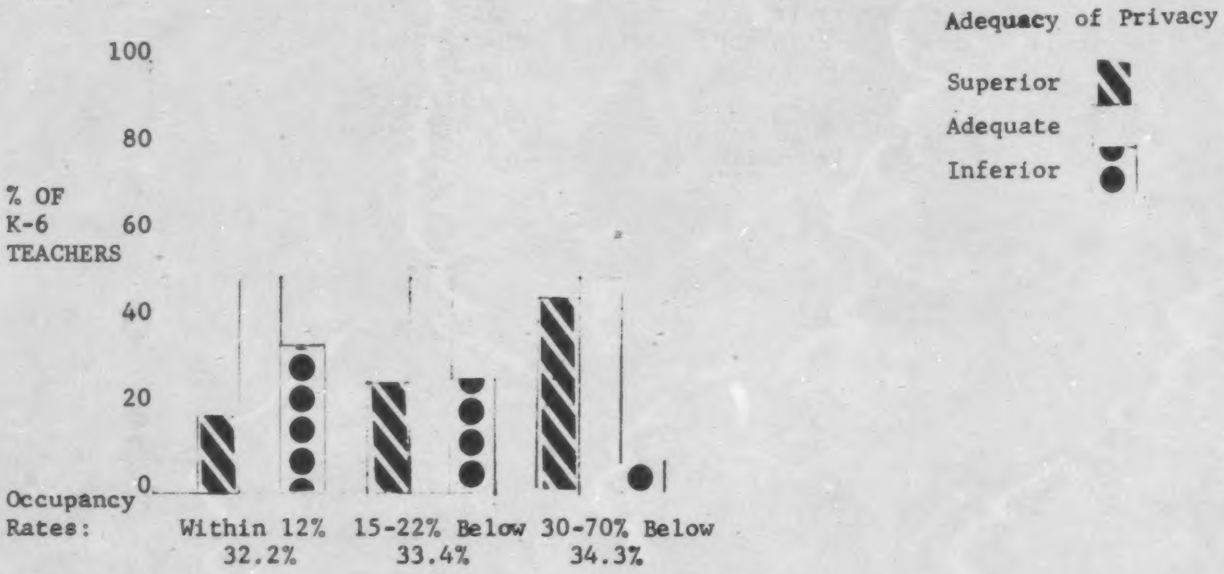
CHART 44: Distribution Of K-6 Students By School Occupancy Rates AND Perception Of Noise In School



This result was confirmed by parallel findings with respect to specific distractions. For example, K-6 students in high occupancy schools were more likely to be bothered by talking, fooling around and noise in both their own and other classes than those from medium or low occupancy schools.

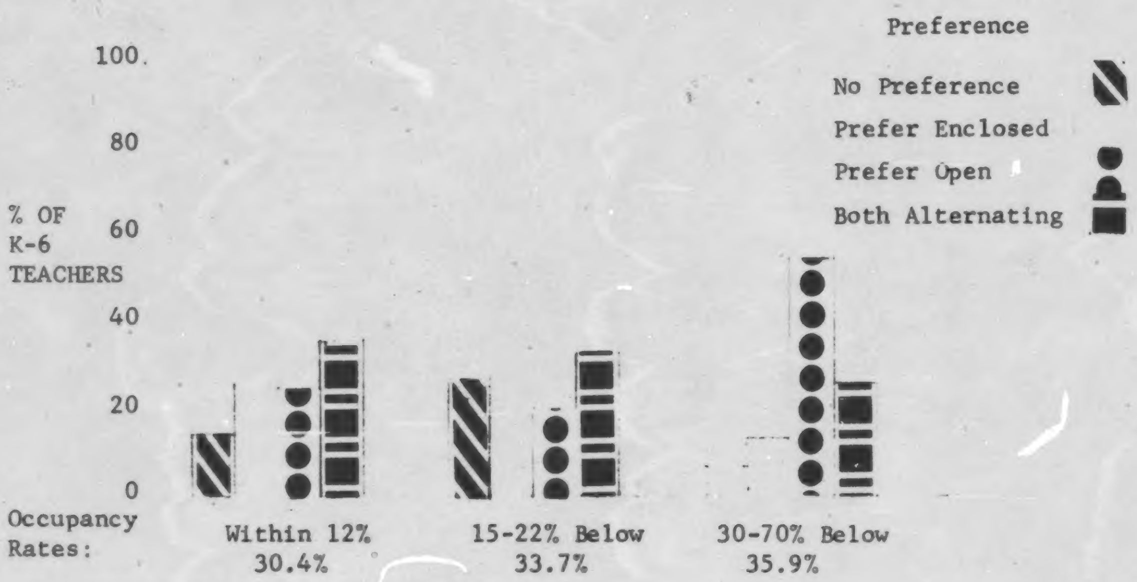
Additional confirmation of the strong relationship between rate of occupancy and noise appeared in the teacher data. At both school levels, teachers in schools with enrolments close to rated capacity were more often bothered by noise in their teaching areas. High rates of occupancy also reflected lower satisfaction concerning privacy for both teachers and students.

CHART 45: Distribution Of K-6 Teachers On Ratings Of Provisions For Privacy For Teachers And Students (Privacy Scale) AND Occupancy Rates



Preference for open space was higher among K-6 teachers in low occupancy schools. This finding is illustrated in Chart 46.

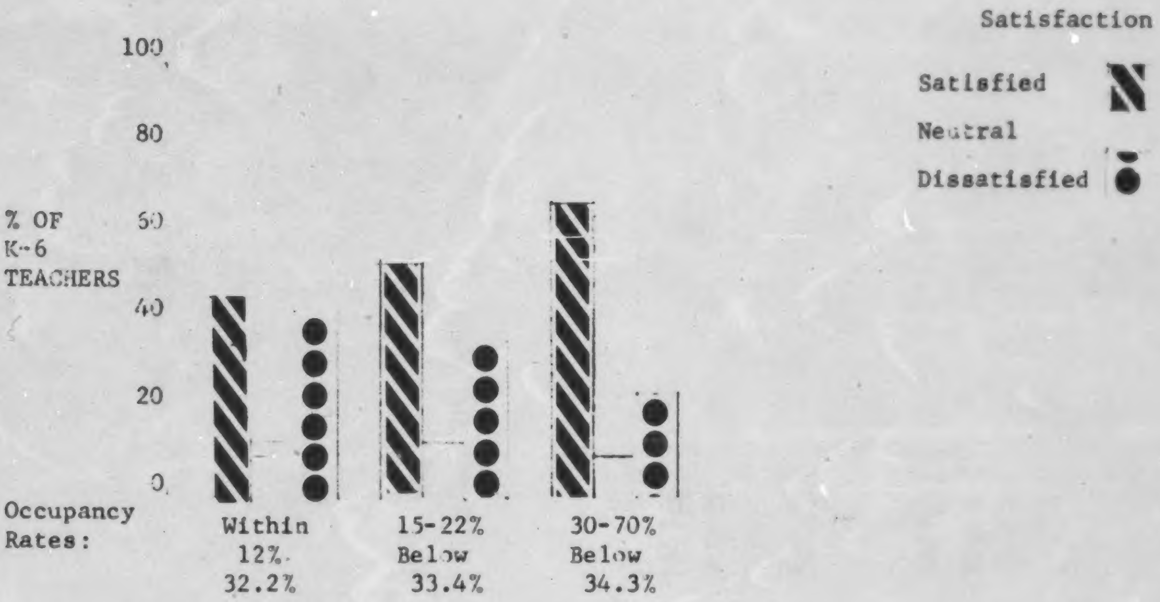
CHART 46: Distribution Of K-6 Teachers By Preference For Type Of Space AND Occupancy Rates



The implication of this finding is that extra space (provided in this instance by lower occupancy rates) increases teacher preference for open space. Conversely, it may be that open plan works better where extra space is provided. Negative teacher attitudes toward open space may reflect insufficient area allocations in open plan schools where the enrolment is close to rated capacity.

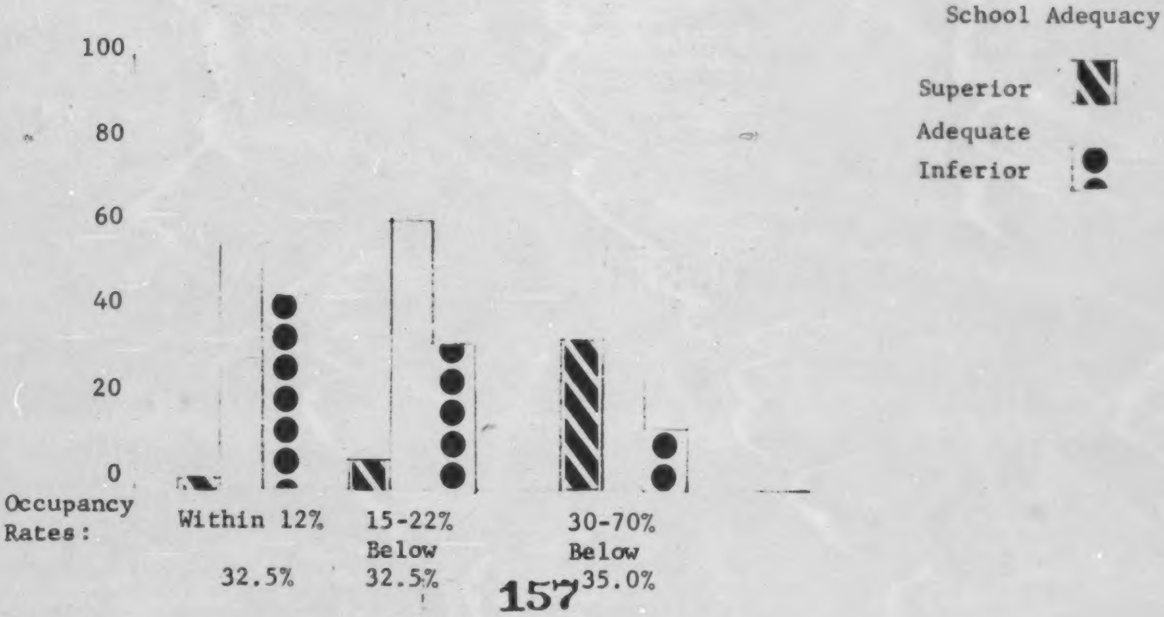
At both school levels, teachers were more likely to rate the roominess of their area as inferior in schools with higher rates of occupancy. In these schools, teachers were also more dissatisfied with the quality of tables, bookshelves, storage units, coatracks and lockers. This higher level of dissatisfaction with furniture in high occupancy schools is illustrated in Chart 47.

CHART 47: Distribution Of K-6 Teachers By Satisfaction With Furniture AND Occupancy Rates



K-6 teachers in high occupancy schools were also more critical of lighting, acoustics and the overall adequacy of their teaching area and the whole school than their colleagues in schools with lower rates of occupancy. These relationships are illustrated in Chart 48.

CHART 48: Distribution Of K-6 Teachers On School Adequacy Scale AND Occupancy Rates



These findings relating teacher and student assessments of their environment to the size and rate of occupancy of the schools are intriguing. Without additional information one could well conclude that more space in open plan and small rather than large schools are more satisfactory to both teachers and students. While such conclusions may be warranted, some caution is in order.

All the large schools and three of the small schools were in low income districts while schools in the low range of occupancy were in both low and high income districts. The correlates of school district income are discussed in the last section of this Chapter, pages 146-155.

3. Rate Of Growth In Enrolment

Several principals mentioned in the interviews that the rate of growth affected both program and staffing. Examination of enrolments over a two to three year period, made it obvious that some schools had expanded at an exceedingly fast pace. In one school the initial enrolment grew by sixfold within a year. In another the enrolment tripled.[1] In two other schools the enrolment doubled and a fifth school's enrolment grew by more than a third within a year. Four other schools with moderate growth were grouped with the schools which exhibited stable or slightly diminished enrolments.

Table 137: Distribution Of Schools By Rate Of Growth In Enrolment

		LEVEL	
Rate Of Growth	All	K-6	7-9
Very fast	5	3	2
All Others	17	12	5

At the time of the study, none of the fast growth schools had reached rated capacity, in fact three of the five were still 30 - 70 per cent below their rated capacity. They represented a wide range of income levels, but none were schools in lower income districts.

Principals had noted that the rate of growth affected staffing. The data certainly showed that teachers in these schools had less experience. Teachers in fast growth schools at both levels had significantly fewer years experience both in open areas and in their present school. In addition, K-6 teachers in fast growth schools had less overall experience than teachers in schools with stable or declining enrolments. A majority of teachers in the 7-9 level schools whose enrolment grew quickly had had no inservice training for open plan schools. In addition, more of them had had no choice in their assignment to the school.

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[1] This school also endured a change of feeder schools and grade levels.

Table 138: Characteristics Of Teachers In Schools With A Fast Rate Of Growth In Enrolment Compared With Teachers In Other Schools

Characteristic	% Teachers in Fast Growth Schools		% Teachers in Other Schools	
	K-6	7-9	K-6	7-9
Years of Teaching Experience -				
2 years or less	35		18	
6 years or more	39		52	
Years Experience in Open Areas -				
None	38		20	
3 years or more	10	10	34	23
First Year in School	60	42	32	21
No Inservice Training		56		32
Asked to teach in school	25	56	41	72
Rated own teaching style traditional	48		25	

Class size tended to be larger in the K-6 rapid growth schools but seminar rooms were more often available possibly because most of these schools had not reached their rated capacity.

There seems to be some relationship between the rate of growth and program. Both teachers and students in schools which grew rapidly reported more use of films and television, and less use of audio equipment. Teachers reported doing a lot more planning. Most of them rated their own teaching style as traditional and they indicated less use of family grouping than other teachers. The student data tends to reinforce the traditional image: more students had their own desks, they made less use of sinks, they went on fewer field trips, they helped move furniture less frequently, visited the library less frequently by themselves and in small groups, and they tended to spend time with only one teacher. [1]

In addition, compared to other K-6 students, more students in rapidly growing schools tended to report that they "never" liked going to school (24% vs 11%), "never" liked working in open areas (25% vs 14%), were bored all or most of the

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1. Most of these relationships are at the K-6 level.

time (30% vs 19%), and were less likely to report satisfaction with the library (86% vs 96%).

Apparently the fast rate of growth did not have an adverse effect on teachers' satisfaction with their physical environment. At both levels, but more frequently at the K-6 level, teachers in these schools were much more likely than other teachers to rate the environmental features of their school as superior. This higher rate of satisfaction is probably attributable to a combination of factors other than rate of growth: all of these schools had either small or medium sized student enrolment, none had reached their rated capacity, and none were schools in lower income districts.

4. Year Of Operation

At the time of the study, the schools were in their first, second or third year of operation. No examination of the 7-9 schools by years of operation was made because 6 out of the 7 were in their second year. Only 2 small K-6 schools were in their second year of operation. Thus, the following discussion is based on the results from 9 K-6 schools in their third year of operation (203 teachers and 323 students) and 4 K-6 schools in their first year of operation (114 teachers and 213 students).

(a) Biographic Characteristics Of Teachers

There were no significant differences in teachers' age, sex, education or total number of years of teaching experience. However the teachers in the schools in their third year of operation had more experience teaching in open areas, and were more likely to have asked to teach in the school and to teach the age group they were currently teaching. They were twice as likely to prefer teaching in open areas.

Table 139: Distribution Of K-6 Teachers By Year Of Operation AND Their Preference For Type Of Space

	Preference For Type Of Space			
Year Of Operation	% No Preference	% Prefer Enclosed Space	% Prefer Open Area	% Prefer Alternating during day
First	28	19	20	32
Third	10	18	42	29

(b) Biographic Characteristics Of Students

A larger proportion of the students in the schools which had been operating for three years were younger, and had English as their mother tongue. Compared to students in the schools in first year of operation a smaller proportion liked going to school "all the time" (30% vs 42%), and a larger proportion were bored all or most of the time (25% vs 15%).

(c) Working Conditions

Fewer of the teachers in the third year schools taught only one grade level (57% vs 81%); they were more likely to be in an area with 0-1 wall; and less likely to be in area equivalent in size to a single classroom.

Students in the third year schools were more likely to be bothered by noise of all types more frequently. For instance, 42% of the students in the third year schools compared to 29% of the students in the first year schools, reported being bothered by talking in other classes. In addition, in response to the question "what would you tell a visitor about your open plan school," 36 students in the first year schools referred to noise (72% of the comments were negative) and 62 students in the third year schools volunteered "noise" (94% of the comments were negative).

(d) Evaluation Of Physical Environment

Teachers in schools in their third year of operation were more likely to be satisfied with their environment than teachers in schools in first year of operation. A larger proportion gave superior ratings to roominess, lighting, atmosphere, coat racks, storage facilities and chairs.

(e) Use Of Physical Environment

More extensive use of the school facilities was reported by teachers in the third year schools. They reported more student use of seminar rooms, higher frequency of use of the teacher preparation room, more use of the flexibility features of the SEF furniture, much higher student use of audio equipment and television. In addition, teachers reported both teachers and students using the library more frequently.

The student data generally showed similar results. In schools which were in third year of operation more students reported using seminar rooms, going on field trips, moving folding wall, using audio, and viewing films or television, more frequently. In contrast to teachers, students did report visiting the library less frequently as a class.

5. Average Income Of School Districts:

As described earlier,[1] elementary school districts in Metropolitan Toronto were ranked from a low of 1 to a high of 396 on the basis of average income. On this ranking scale the K-6 SEF schools fell into two distinct groups: (1) low-middle income group with an income range from $7,797 to $11,932, (average $10,480) and ranking from 30 - 243; and (2) a high income group with a range from $14,815 to $24,633 (average $16,602) and rankings from 336 to 388.

The average income of the feeder school districts was computed for each 7-9 school. There were no 7-9 schools below an average income of $11,055. Six of the seven schools fell into a middle range of income, $11,055 to $14,392, while the one remaining school drew students from the highest income brackets with an overall average income for the district of $28,975.

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[1] Page 14.

Some relationships between district income and other variables were noted at the K-6 level in both the teacher and student data. Few relationships were evident at the 7-9 level where six of the seven schools were in the middle income range.

Another grouping of schools reflected socio-economic status even more powerfully. Five of the six replacement schools were in the lowest district income areas of the 23 schools in the study and half were inner city schools. In the overall Metro ranking from lowest to highest, five fell between 30-75, the remaining one ranked 146/396. There was a narrow range of income in these six schools, from $7,797 to $10,338; the range for the remaining 9 schools was from $9,900 to $24,633. Replacement schools had an average income of $8,829 compared to $14,953 for the remaining 9 K-6 schools.

As no 7-9 schools fell into the under $10,000 category, and as the direction of any differences using the earlier break was the same as at the K-6 level, the data as reported here is for the six lower income K-6 schools, and the nine higher income K-6 schools. None of the six schools had a small enrolment with the result that the sample of both teachers and students is larger in these schools than in the remaining 9 schools.

Table 140: Distribution Of K-6 Sample By Lower Income AND Higher Income Districts

	Schools	Teachers	Students
Lower Income Districts	6	185	302
Higher Income Districts	9	155	275

(a) Biographic Characteristics of Teachers

There were no significant differences by age, sex, or education between teachers in schools in lower income districts and other K-6 teachers. However, teachers in the schools in lower income districts had less experience in open plan schools than teachers in other K-6 schools. Sixty-eight per cent had one year or less experience, compared to 45% of teachers in other schools. Teachers in schools in lower income districts reported more types of inservice training for open plan schools, and more of them had visited other open plan schools. They also differed on their preferences for teaching in open or enclosed space.

Table 141: Distribution Of K-6 Teachers By Preference For Teaching In Open Or Enclosed Space AND By District Income

	No Preference %	Prefer Enclosed %	Prefer Open %	Both Alternating %
Lower Income Districts	23.4	17.2	29.0	30.3
Higher Income Districts	9.2	20.6	38.2	32.1
Total	16.7	18.8	33.3	31.2
N	(46)	(52)	(92)	(86)

Approximately the same proportion of teachers in each type of school preferred enclosed space but teachers in schools in higher income districts were more likely to opt for open space (38% vs 29%), while teachers in schools in lower income districts were more likely to state that they had no preference for a particular type of space (23% vs 9%).

(b) Biographic Characteristics of Students

Grade 5 students in lower income district schools were older, more likely to have been born outside of Canada, to have learned English as a second language and to be less mobile than grade 5 students from other schools. Although nearly half the students in schools in lower income districts enjoyed working in open areas all or most of the time, the proportion was smaller than for the comparable group of students in other schools. However, they were more likely to enjoy going to school all the time. There were no significant differences in how often they were bored or how often they got their own way in school.

Table 142: Comparison Of Biographic Characteristics Of Grade 5 Students In Schools In Lower Income Districts With Those Of Grade 5 Students In Schools In Higher Income Districts

Characteristic	Students In Schools In Lower Income Districts %	Students In Schools In Higher Income Districts %
11 - 12 years old	49	35
Born outside of Canada	28	20
English not mother tongue	35	11
Number of schools attended:		
1 - 2 schools	65	37
5 or more schools	13	21
Like working in open areas all/most of the time	48	60
Like going to school all the time	41	30

(c) Working Conditions

Compared to other K-6 teachers, teachers in schools in lower income districts had smaller class sizes and tended to teach only one grade level. They were much more likely to be in an area equivalent in size to one classroom. They had less access to seminar rooms, more access to enclosed classrooms and had more walls around their teaching areas. Despite the fact that more of them worked in enclosed areas, these teachers reported less privacy both for themselves and their students. They were less likely to rate the roominess of their area as "superior". There were no significant differences in perceptions of noisiness; a majority of all K-6 teachers (70%) reporting their areas to be "sometimes" noisy.

Table 143: Comparison Of Working Conditions Of K-6 Teachers In Schools In Lower Income Districts AND K-6 Teachers In Schools In Higher Income Districts

Specific Working Condition	Teachers In Schools In Lower Income Districts %	Teachers In Schools In Higher Income Districts %
Classes of 26 students or less	33	18
Teaching area equivalent in size to 1 classroom	75	36
Teaching area equivalent in size to 2 classrooms	10	31
0 - 1 Wall in teaching area	20	46
Two walls in teaching area	26	31
Three walls in teaching area	33	14
Enclosed classroom as a teaching area	20	10
Seminar rooms "never" available	23	19
Enclosed classroom available all the time	21	11
Roominess of area rated superior	18	38
Never enough privacy for teachers	22	10
Enough privacy for students all/most of the time	28	41
No windows	25	17
Exclusively SEF furniture	87	57

Fewer teachers in schools in lower income districts taught specialized subjects.

Table 144: Percentage Of K-6 Teachers Teaching Specialized Subjects

	Art %	English %	Music %	Phys.Ed. %	Science %
Teachers In Schools in Lower Income Districts	32	72	18	18	35
Teachers In Schools in Higher Income Districts	42	83	33	39	47
N	112	231	74	82	121

Students in schools in lower income districts did not differ from students in the other schools regarding crowdedness or privacy. This is a marked contrast to teachers in schools in lower income districts who were more critical than other

K-6 teachers about the roominess of their area, and the provisions for privacy. However, noise was no more of a problem for teachers or students whether they were in schools in lower or higher income districts.

(d) Evaluation Of Physical Environment

(i) Specific Aspects Of Environment: Teachers in schools in lower income districts were much more negative than other K-6 teachers about almost all aspects of the physical environment.

Table 145: Percentage Of K-6 Teachers In Lower Income Districts And Higher Income Districts AND Their Assessment Of Specific Aspects Of Their Physical Environment

Specific Aspect Of Physical Environment	Teachers In Schools In Lower Income Districts %	Teachers In Schools In Higher Income Districts %
Dislike exterior appearance	51	27
Like interior appearance "a lot"	57	71
School layout rated superior	10	23
School acoustics rated inferior	26	15
School lighting rated superior	28	46
Area lighting rated superior	20	44
School atmosphere rated inferior	75	41
Area atmosphere rated inferior	70	37
Overall school rated superior	6	25
Overall area rated superior	9	26
Dissatisfied with furniture	39	26
Coat racks rated inferior	69	44

K-6 students in schools in lower income districts liked the exterior and interior appearance of the school and the building as a whole in the same high proportion as other K-6 students. Where there were differences, in contrast with teachers, students in schools in lower income districts were more favourably disposed to facilities than other students. For instance, 74% of K-6 students in schools in lower income districts liked their lunchroom facilities, compared to 53% of other K-6 students; 83% of them liked their furniture compared to 75% of the students in the remaining sample.

(ii) Ideal Open Plan School and Canter Environmental Assessment: The four items applicable to the building from the IOP Scale were rated by teachers as good or poor descriptors of their school. On all four items a much higher proportion of teachers in schools in higher income districts gave the items the highest possible rating on the seven point scale.

Table 146: Rating Of Building Items On Ideal Open Plan School Scale By Teachers In Schools In Lower And Higher Income Districts

Descriptor Applied To School	% Rating Item as "Very Good" Descriptor Teachers In Schools In Lower Income Districts	Teachers In Schools In Higher Income Districts
Building has plenty of floor space	27	42
Building has a convenient layout	10	20
Building has efficient noise control	19	33
Sufficient number of enclosed spaces to complement the open plan	3	14

Similarly, on the Canter Environmental Assessment Scale, marked differences favouring the schools in higher income districts appeared in nine of the ten items measuring teacher reaction to the school building and on three of the ten items pertaining to their reactions to their teaching area.

Table 147: Teacher Reaction To Building And Teaching Area On Canter Environmental Assessment Scale

Description Of School	% Rating Item As Best Possible Descriptor Teachers In Schools In Lower Income Districts	Teachers In Schools In Higher Income Districts
Building adequate	6	25
Building suitable	8	23
Building pleasant	17	46
Building comfortable	14	40
Building good	11	31
Building interesting	16	35
Building stimulating	11	27
Building best possible	2	10
Building above average	7	20
Area acceptable	27	44
Area pleasant	29	49
Area comfortable	21	41

Teachers were much more in agreement on their ratings on the library; differences were generally not as large, and for some items the direction was in favour of the schools in lower income districts.

Table 148: Teachers Reaction To Library On Canter Environmental Assessment

Description Of Library	% Rating Item As Best Possible Descriptor Teachers In Schools In Lower Income Districts	Teachers In Schools In Higher Income Districts
Library comfortable	39	52
Library stimulating	33	36
Library best possible	17	14

(e) Evaluation Of Social Environment

(i) Interaction Patterns Of Teachers: K-6 teachers in schools in lower income districts made relatively less use of family grouping, spent less time with their teams and were more likely to work in large teams of five or more members than K-6 teachers in schools in higher income districts.

Table 149: Interaction Patterns Of K-6 Teachers In Schools By District Income

	Teachers In Schools In Lower Income Districts %	Teachers In Schools In Higher Income Districts %
Use family grouping all/most of the time	9	20
Less than a quarter of time spent with team	55	40
Two persons on teaching team	21	43
Five or more persons on teaching team	37	14

(ii) Ideal Open Plan School: Teachers in schools in lower income districts rated every item in the Ideal Open Plan School less positively than other K-6 teachers. Only one item, "Teachers have a great deal of influence on program," was not significantly different.

Table 150: Rating Of Student, Teacher And Program Items In Ideal Open Plan School Scale By Teachers In Schools In Lower And Higher Income Districts

Item	Teachers In Schools In Lower Income Districts		Teachers In Schools In Higher Income Districts	
	%	N	%	N
Staff members respect and trust one another - very good descriptor	9	(16)	30	(46)
Principal is committed to the open plan - very good descriptor	28	(50)	59	(88)
Principal is helpful and supportive - very good descriptor	21	(37)	56	(86)
Students are developing better attitudes and a sense of responsibility -				
fairly good descriptor	31	(56)	44	(67)
very good descriptor	4	(8)	8	(13)
Students are learning the basic skills - very good descriptor	16	(28)	40	(55)
Students are developing curiosity and creativity - very good descriptor	11	(19)	20	(31)
There is a well integrated program -				
fairly good descriptor	50	(89)	52	(79)
very good descriptor	2	(4)	20	(30)
There is good communication with parents - very good descriptor	13	(23)	31	(46)
There is good overall tone - very good descriptor	11	(19)	28	(43)

(iii) Students: Students in schools in lower income districts compared to K-6 students in schools in higher income districts were less likely to report students in their school friendly all or most of the time (47% vs 66%), but more likely to report teachers helpful all the time (66% vs 54%).

A high proportion of all K-6 students never helped to make rules in their school but even more students in schools in lower income districts felt uninvolved (70% vs 60% never helped to make rules). Students in these schools also reported working with fewer students but playing with more students than students in schools in higher income districts.

Work patterns varied. More students in schools in lower income districts than other K-6 students reported working in small groups all the time (18% vs 6%) and working with the whole class all the time (13% vs 7%), but equal proportions reported working independently.

(f) Use Of Physical Facilities

There was less use of teacher preparation room, service column, media, and the library by teachers in schools in lower income districts, but there were no significant differences in the use of the school's flexibility.

Table 151: Comparative Use Of Physical Facilities By Teachers In Lower And Higher Income Districts

Facility	Teachers In Schools In Lower Income Districts		Teachers In Schools In Higher Income Districts	
	%	N	%	N
Daily use of teacher preparation room	18	(25)	45	(49)
Use service column less than once a week	32	(37)	14	(14)
Class visits library less than once a week	46	(72)	18	(23)
Class visits library 3 or more times a week	11	(17)	13	(17)
Teachers visit library daily	10	(17)	21	(29)
Teachers visit library 3-4 times a week	23	(38)	34	(46)
Students viewed films less than once a week	40	(69)	25	(35)
Students viewed slides/filmstrips less than once a month	33	(55)	18	(26)

Students in schools in lower income districts reported less frequent use of seminar rooms and folding walls and fewer field trips. They were more likely to report that they never helped to move the furniture. There were no significant differences on use of media such as films, filmstrips or audio equipment; however, more students in schools in lower income districts reported watching television frequently in school.

A very high proportion of all K-6 students liked the library but there was almost unanimous satisfaction with the library amongst students in schools in lower income districts (98%). Students in these schools were somewhat more likely to report visiting the library frequently, but less likely to visit it alone or in small groups.

Table 152: Comparative Use Of Physical Facilities By Students In Schools In Lower and Higher Income Districts

Facility	Students In Schools In Lower Income Districts	Students In Schools In Higher Income Districts
	%	%
Use seminar rooms once or more a week	33	41
One field trip this year	39	15
Two or more field trips this year	46	70

(continued)

Table 152: (continued)

Facility	Students In Schools In Lower Income Districts %	Students In Schools In Higher Income Districts %
Never helped move furniture	32	20
Never moved folding wall	80	65
Viewed television 3 or more times a week	24	14
Like library	98	90
Visit library with class less than once a week	41	35
Visit library with class 3 or more times a week	19	12
Visit library alone or in groups less than once a week	33	32
Visit library alone or in groups 3 or more times a week	31	42

IN SUMMARY: Teachers in schools in lower income districts varied on only a few biographic and affective characteristics from teachers in schools in higher income districts. However, their response to their environment, both social and physical, was significantly more negative on most variables. In addition they made less use of the physical facilities in their schools.

Compared to other grade 5 students, students in schools in lower income districts were older, less likely to be native Canadians or to have English as their mother tongue. They were more likely to enjoy going to school, were somewhat more likely to be satisfied with their environment but less likely to make frequent use of the physical facilities.

CHAPTER 11

FINDINGS RELATED TO SOME SPECIFIC TEACHER CHARACTERISTICS

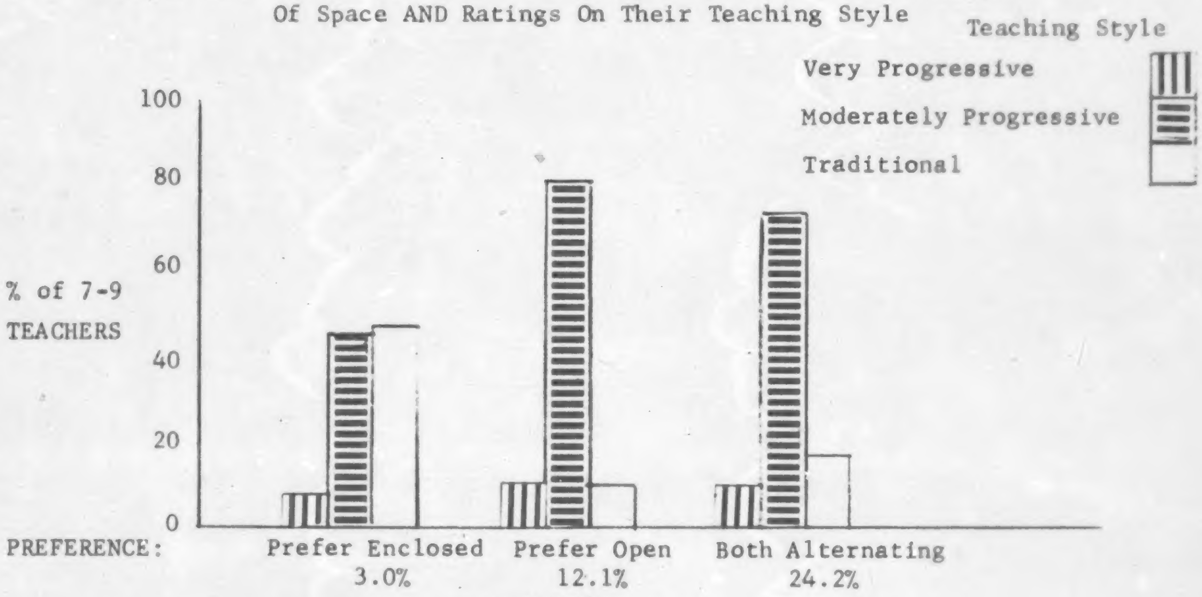
In this chapter teachers' preference for type of teaching area (open or enclosed), their choice in assignment to their school, the agreement among teachers within schools about the extent of program openness (DISC Consensus), and the Innovativeness Scores are discussed in relationship to their answers on other questions.

1. Teachers' Preference For Type Of Space

(a) No Preference: Teachers who stated that they had no preference for either an open or enclosed teaching area were more likely to be in schools in lower income districts or in schools which were in their first year of operation at the time of the study.

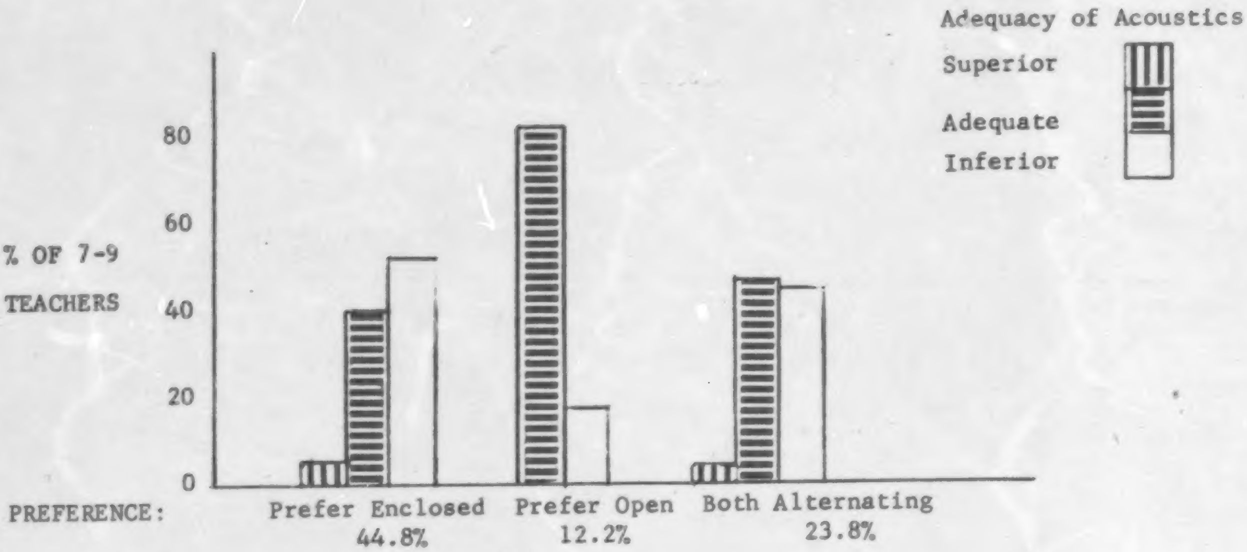
(b) Prefer Enclosed Teaching Area: At both levels teachers who opted for enclosed space were also more likely to rate their own teaching style as traditional.

CHART 49: Distribution Of 7-9 Teachers By Preference For Type Of Space AND Ratings On Their Teaching Style



Those who indicated a preference for enclosed classrooms also tended to report that their teaching area was noisy all or most of the time and to rate the acoustics of both the area and the school as inferior (illustrated for 7-9 level, Chart 50.

CHART 50: Distribution Of 7-9 Teachers By Preference For Type Of Space AND Ratings On Adequacy Of School Acoustics



(c) Prefer Open Teaching Area: Those teachers at the K-6 level who preferred teaching in an open area were more likely to be in small schools, schools which were in their third year of operation, and schools in which the enrolment was well below rated capacity. 7-9 teachers who preferred open areas were more likely to be in schools with a rapid growth in student enrolment.

K-6 teachers who opted for open areas were more likely to have more open area experience (Chart 51), and to have requested the assignment in their school. At both levels, those preferring open areas tended to rate their teaching style as moderately progressive and to be high on the Innovativeness Scale (Chart 52).

CHART 51: Distribution Of K-6 Teachers By Preference For Type Of Space AND Years Experience In Open Areas

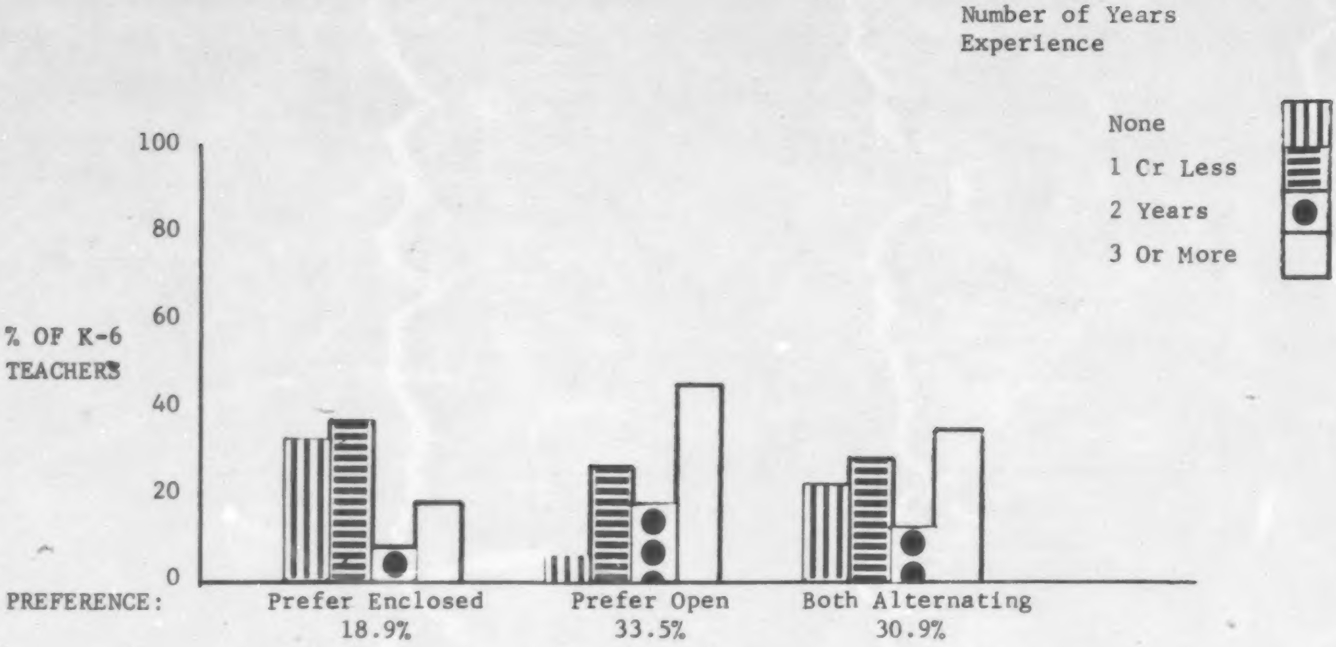
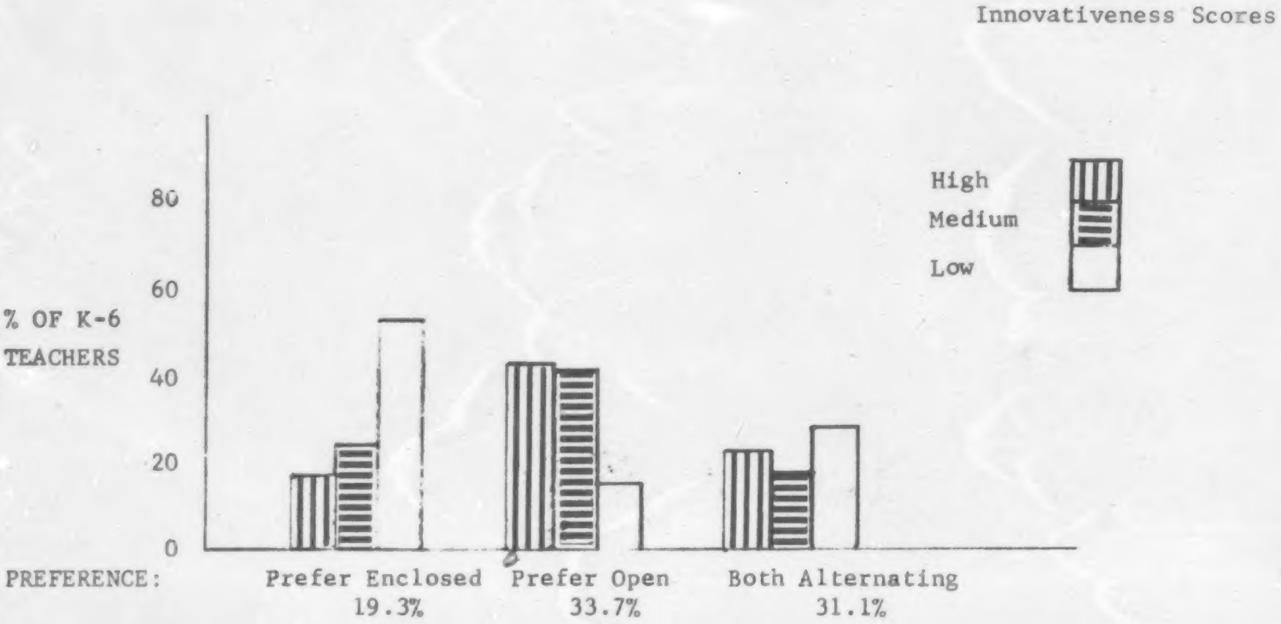
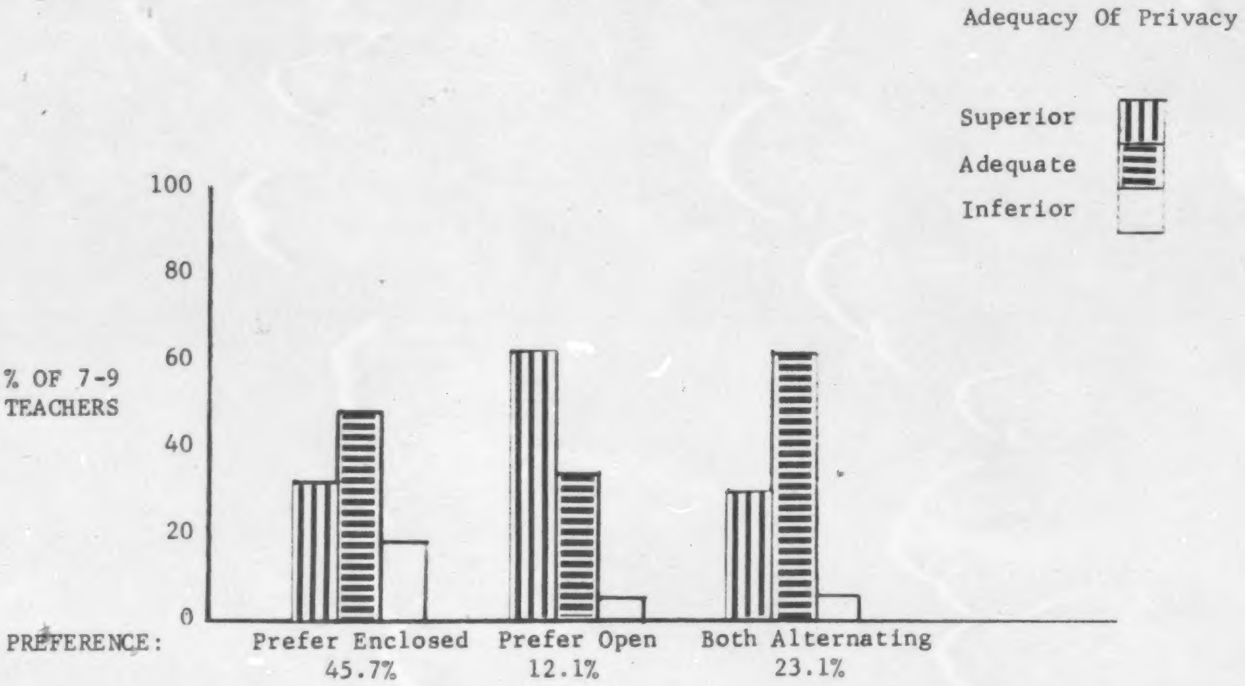


CHART 52: Distribution Of K-6 Teachers By Preference For Type Of Space AND Innovativeness Scale



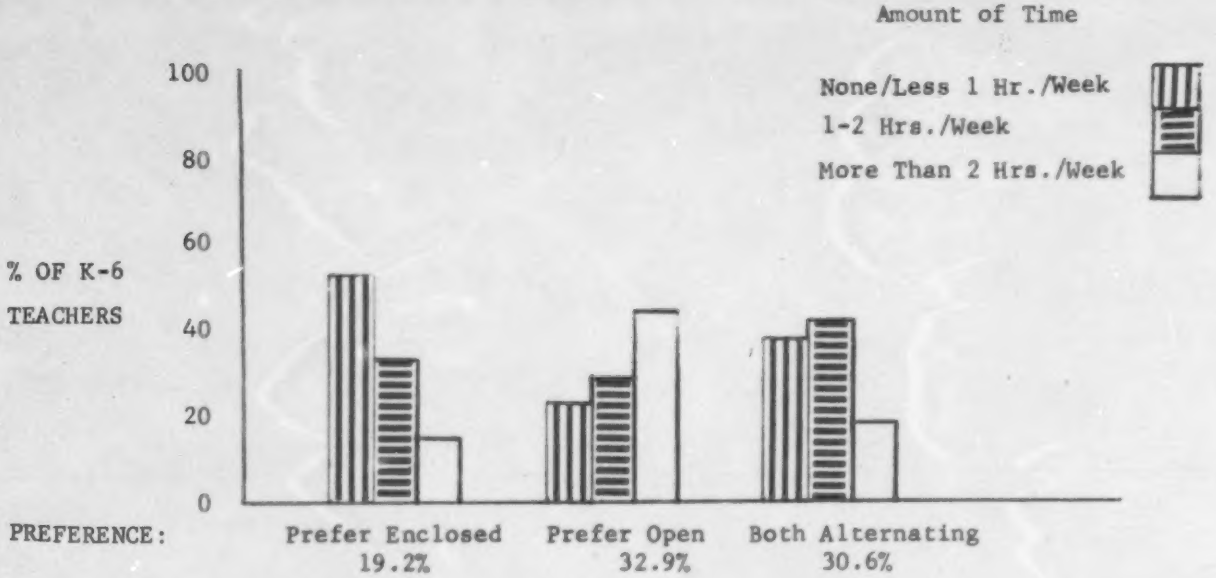
K-6 teachers who preferred open areas reported that seminar rooms were available most of the time and gave superior ratings to their teaching area for roominess. At both levels adequate provisions for teacher and student privacy were reported by teachers who preferred open areas. (Illustrated for 7-9 teachers, Chart 53.)

CHART 53: Distribution Of 7-9 Teachers By Preference For Type
Of Space AND Adequacy Of Privacy Scale



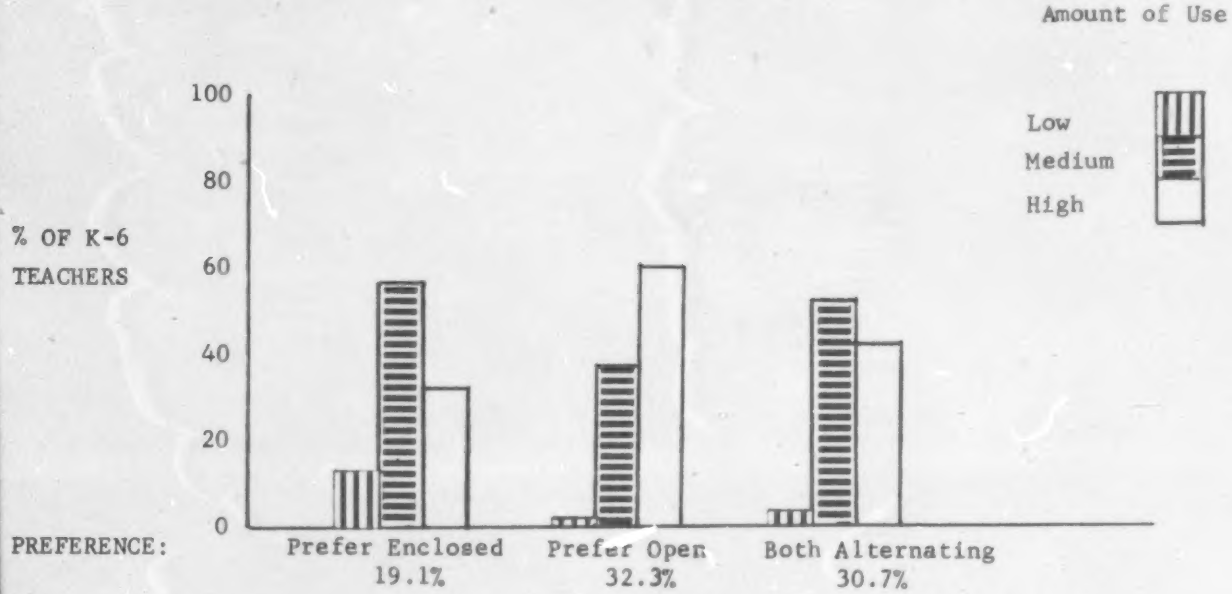
Certain features of the physical environment such as interior appearance (both levels), windows (both levels), layout of school and location of area (K-6 only), school lighting (7-9 only), furniture (K-6 only) were more positively evaluated by teachers who preferred open areas. These teachers also reported that they used more family grouping (7-9 only), spent more time working with team (K-6 only), and more time in joint planning with their teams (7-9 only, see Chart 54.

CHART 54: Distribution Of K-6 Teachers By Preference For Type Of Space AND Time Spent In Joint Planning



At the K-6 level teachers who preferred open areas also tended to make more use of the physical facilities of the school: more teachers reported daily use of teacher preparation room, more frequent use of service column, more frequent re-arrangement of storage containers, and more frequent use of AV, particularly filmstrips and slides. The relationship between space preference and student use of AV is illustrated in Chart 55.

CHART 55: Distribution Of K-6 Teachers By Preference For Type Of Space AND Teacher Ratings of Student Use Of AV (AV Scale)



2. Teachers' Choice Of Assignment To School

At both levels teachers who did not ask to teach in their school tended to be younger and to report less teaching experience, less experience in their school and less experience in open areas. The latter relationship is illustrated for K-6 level in Chart 56. K-6 Teachers who had asked for their assignment were more likely to have had more types of inservice training for open areas (see Chart 57).

CHART 56: Distribution Of K-6 Teachers By Choice Of Assignment AND Years Experience In Open Areas

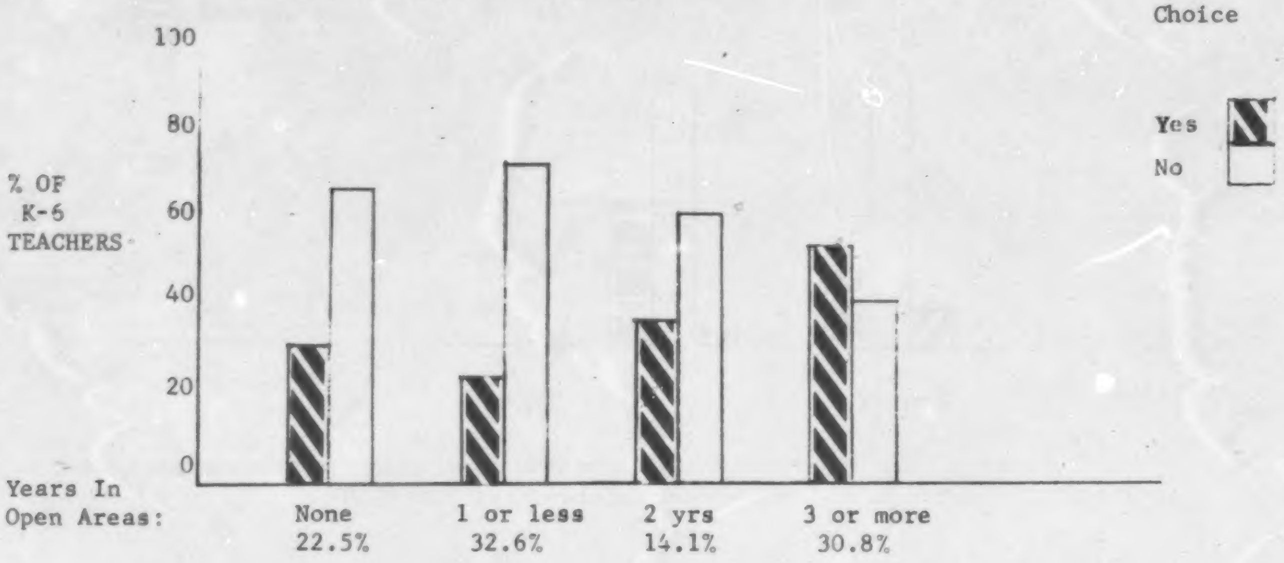
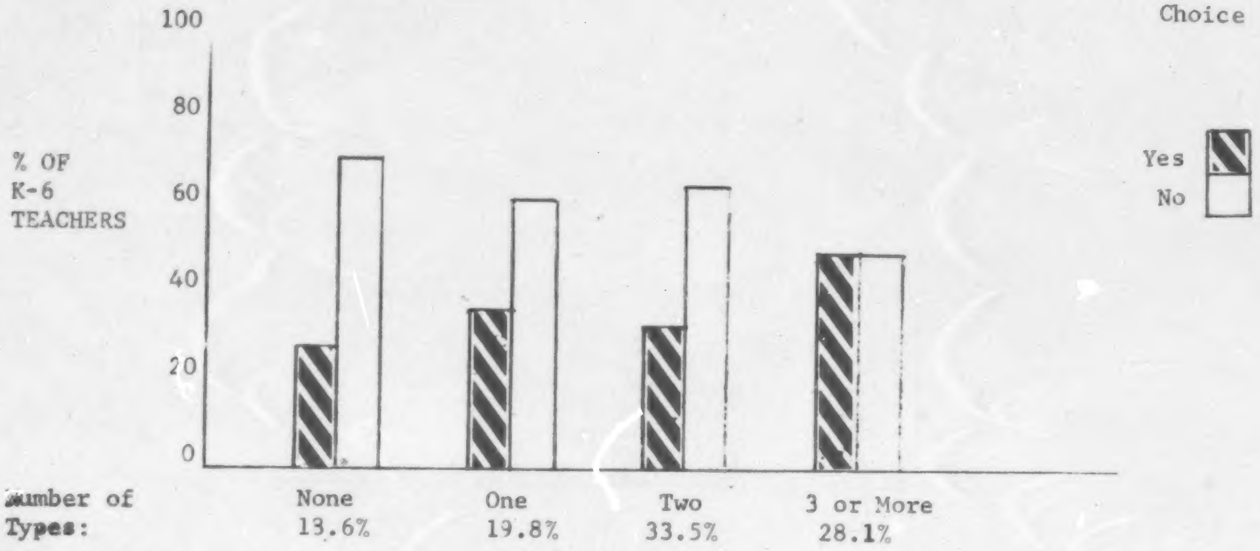
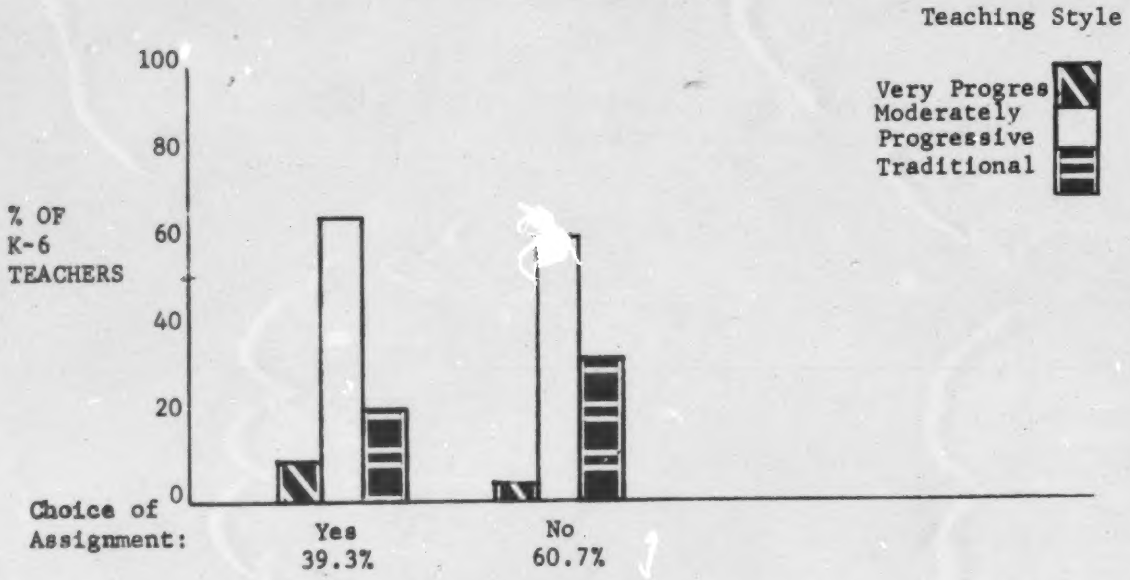


CHART 57: Distribution Of K-6 Teachers By Choice Of Assignment AND Number Of Types Of In-service Training For Open Plan



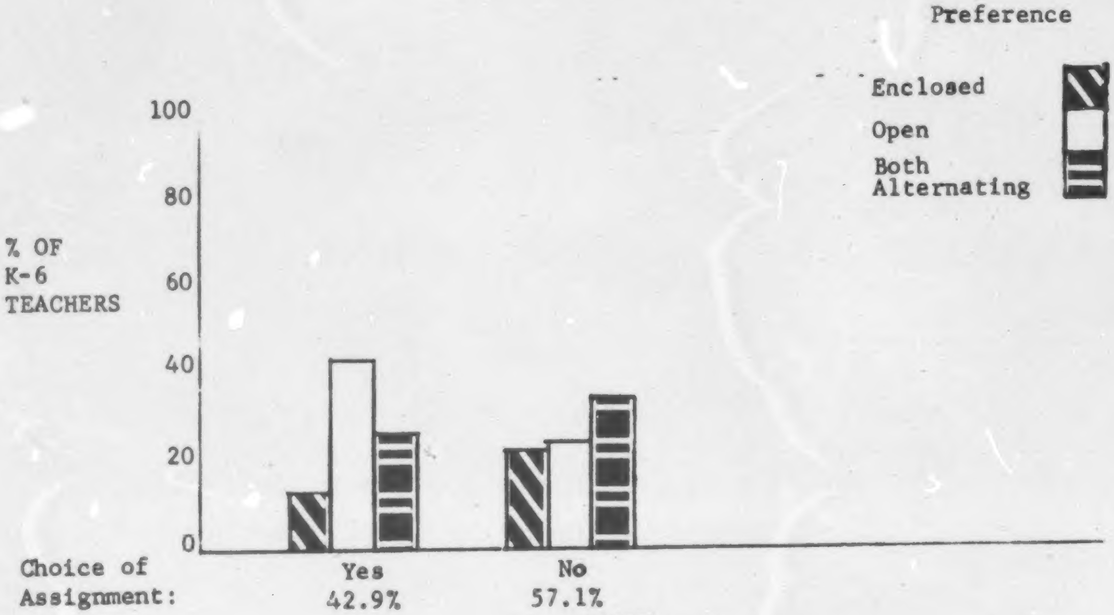
In addition K-6 teachers who had not asked for their assignment were more likely to rate their teaching style as traditional (see Chart 58).

CHART 58: Distribution Of K-6 Teachers By Choice Of Assignment AND Self Rating Of Teaching Style



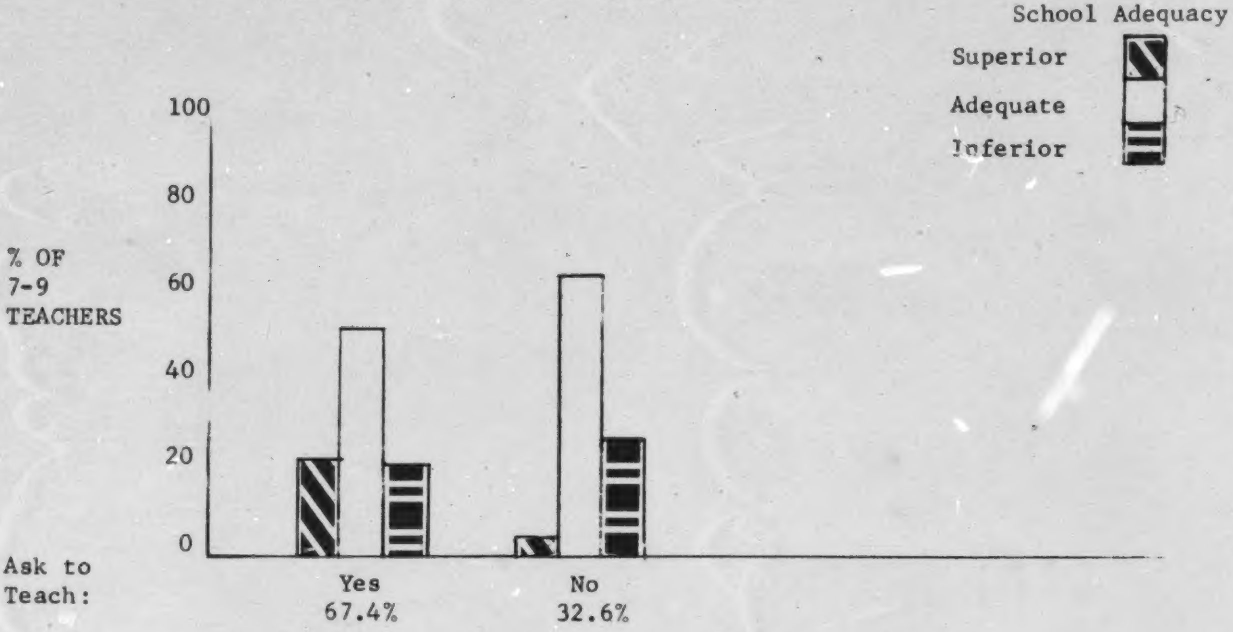
In contrast, K-6 teachers who had requested assignment to their school were more likely to prefer teaching in an open area (see Chart 59).

CHART 59: Distribution Of K-6 Teachers By Choice Of Assignment AND Preference For A Certain Type Of Teaching Space



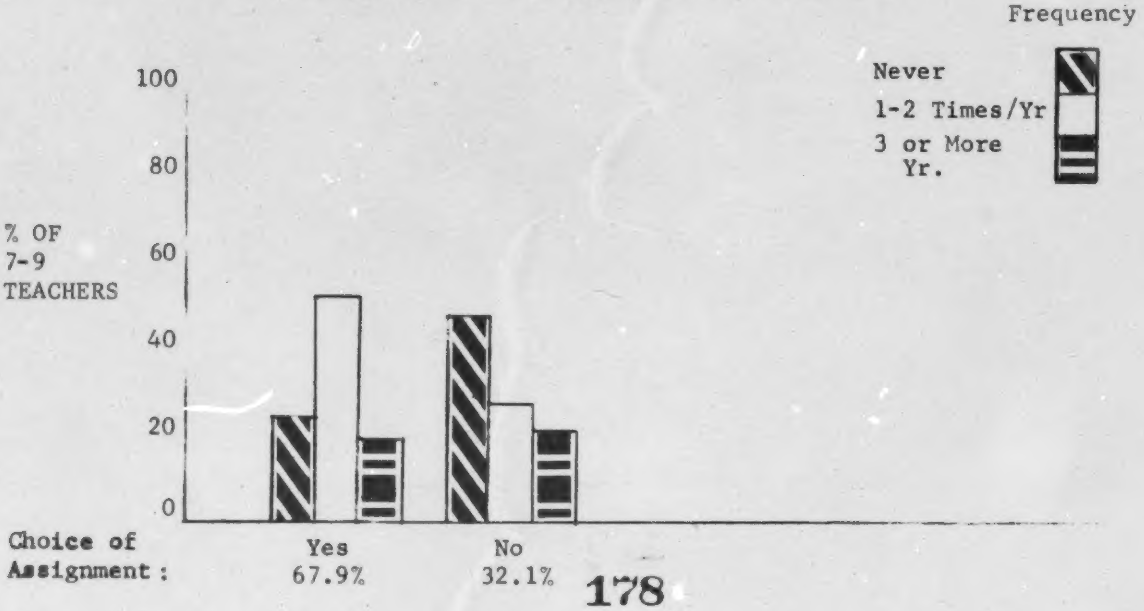
Among 7-9 teachers, those who had chosen to teach in the school were also likely to have rated the layout of the school superior, and to have given high ratings to the school in terms of overall adequacy. (Chart 60)

CHART 60: Distribution Of 7-9 Teachers By Choice Of Assignment AND Overall School Adequacy Scale



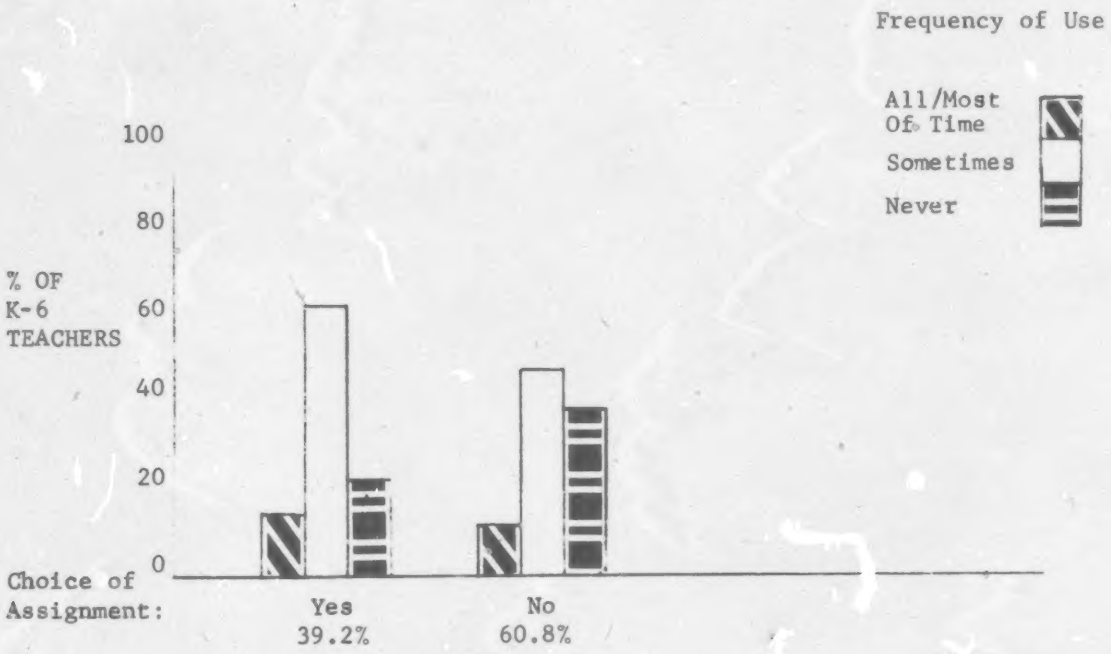
7-9 Teachers who asked to teach in the school also tended to make more use of the school's flexibility. (Illustrated for rearrangement of storage containers in Chart 61).

Chart 61: Distribution Of 7-9 Teachers By Choice Of Assignment AND Frequency Of Rearranging Storage Containers



K-6 Teachers who had chosen their school were more likely to be using family grouping (see Chart 62).

CHART 62: Distribution Of K-6 Teachers By Choice Of Assignment AND Frequency Of Using Family Grouping



3. Agreement Among Teachers About Extent Of Program Openness (DISC Consensus) [1]

At both levels teachers from schools with a high degree of agreement about the extent of program openness in their school were also likely to have more years of teaching experience in open areas.

Table 153: DISC Consensus AND Experience In Open Areas

	Experience In Open Areas			
	Up to 2 Years		3 Years or more	
	%	%	%	%
DISC Consensus	K-6	7-9	K-6	7-9
High	43.0	46.8	71.0	81.1
Low	57.0	53.2	29.0	18.9
N	(230)	(156)	(93)	(37)

---

1. See glossary.

K-6 teachers who had requested assignment to the school were more likely to be in schools where there was a higher level of agreement about program openness.

Table 154: DISC Consensus AND Distribution Of K-6 Teachers Who Requested Assignment To School

	Asked To Teach In School	
	Yes	No
DISC Consensus	%	%
High	61.0	45.0
Low	39.0	55.0
N	(118)	(202)

Teachers who agreed about the extent of program openness in their school tended to work in areas equivalent in size to one classroom (both levels), to be in less open areas (K-6 level), and to be teaching classes of 25 or less (K-6 level, see Table 154.

Table 155: DISC Consensus AND Distribution Of K-6 Teachers By Class Size

	Class Size		
	%	%	%
DISC Consensus	25 or less	26 - 35	36 or more
High	62.7	47.8	28.0
Low	37.3	52.2	72.0
N	(75)	(178)	(25)

Agreement among teachers about program tended to be higher at the K-6 level amongst teachers in teams of 2-3, rather than in teams of four or more.

Table 156: DISC Consensus AND Distribution Of K-6 Teachers By Team Size

	Number Of People On Team	
	%	%
DISC Consensus	2 - 3	4 or more
High	63.2	26.0
Low	36.8	74.0
N	(117)	(100)

Teachers who disagreed with each other about extent of program openness within their school tended to give inferior ratings on adequacy of layout, roominess and acoustics. They also reported more noise in their areas.

Teachers who agreed with each other on degree of program openness were more likely than other teachers to give superior ratings on layout and inferior ratings on school and area atmosphere.

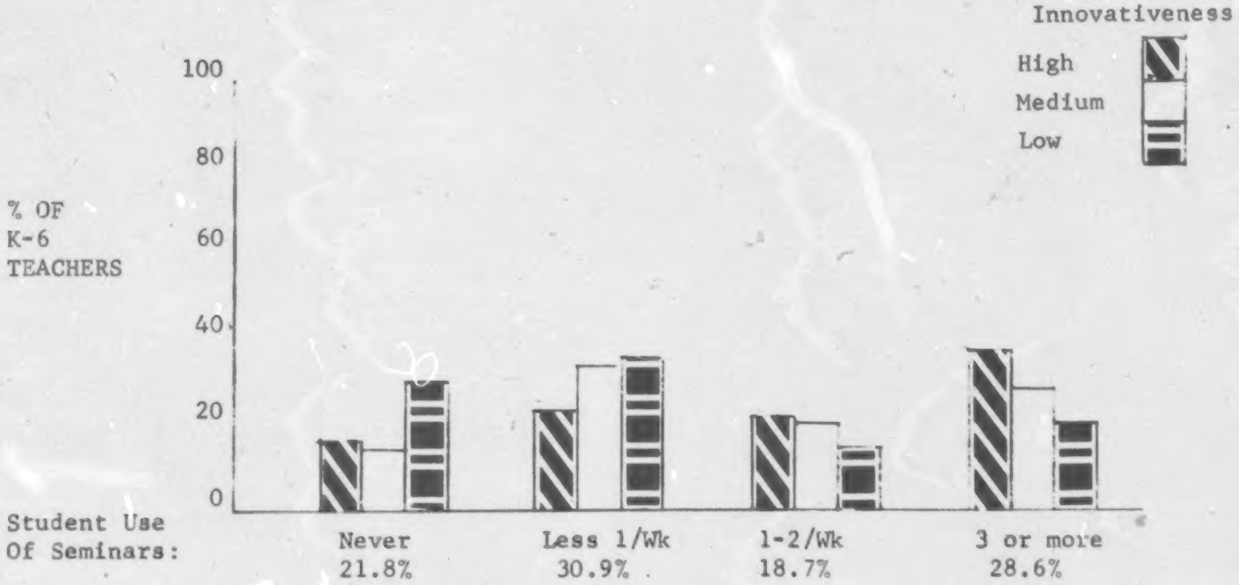
4. Innovativeness

The measure of innovativeness was derived from the responses to two questions. Teachers were asked to rate, (1) their own teaching style (very progressive, moderately progressive or traditional), and (2) how easily they integrated new methods or materials into their regular pattern of teaching (very easy, easy, neutral or difficult).

At the K-6 level teachers who rated themselves high on the Innovativeness Scale had more teaching experience, more experience teaching in open areas, more experience in their present schools and were more likely to prefer teaching in open space. They also tended to be more satisfied with the extent of privacy for teachers, made more use of family grouping, reported large teams of five or more people and spent more time in joint planning.

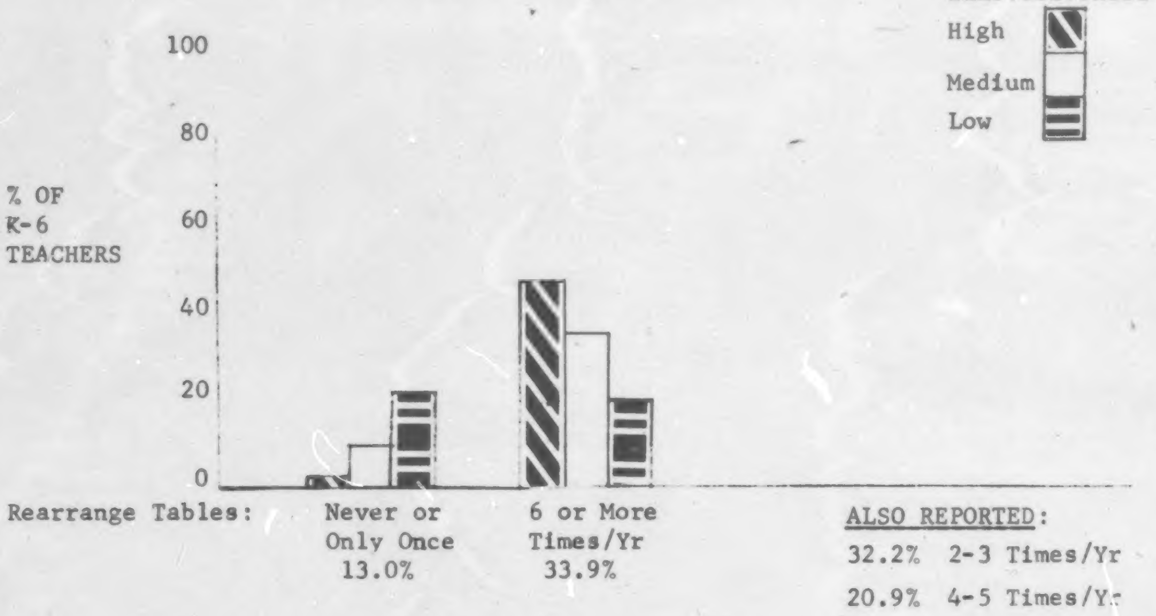
They tended to be somewhat more positive than other K-6 teachers with the exterior appearance and reported more frequent student use of seminar rooms (see Chart 63).

CHART 63: Distribution Of K-6 Teachers By Innovativeness AND Reported Student Use Of Seminar Rooms



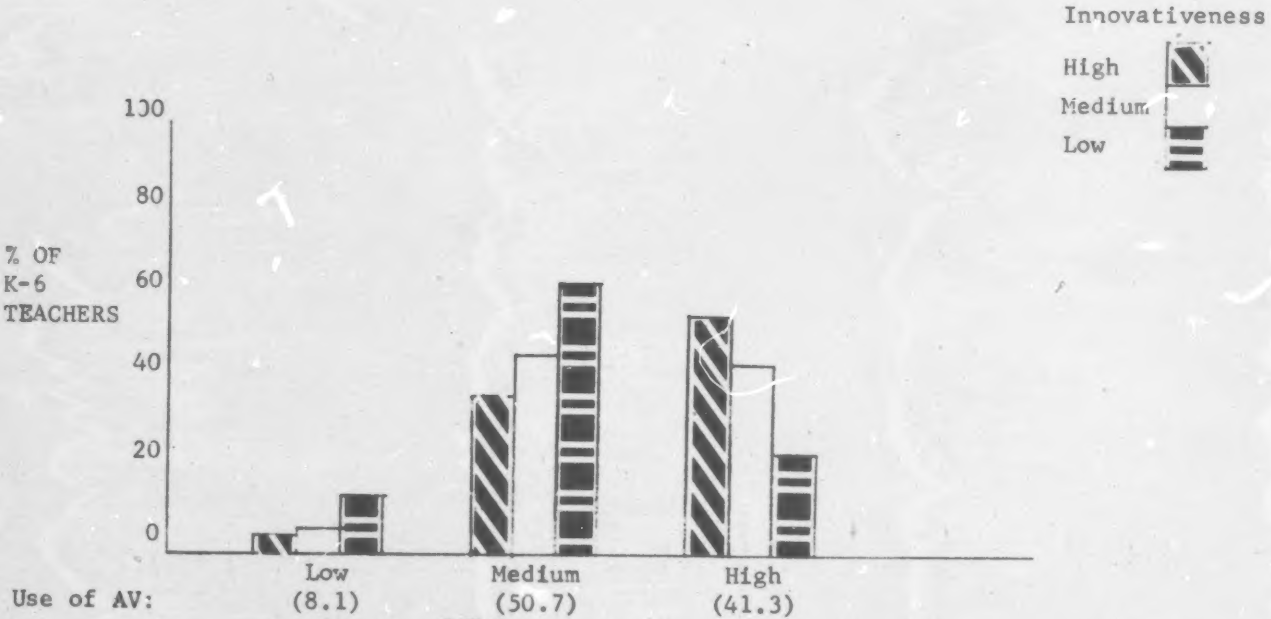
Innovative teachers were more likely to make more use of the flexibility of the SEF furniture: they rearranged shelves, storage containers and tables more frequently. An example of these relationships is illustrated in Chart 64.

CHART 64: Distribution Of K-6 Teachers By Innovativeness AND Frequency Of Rearranging Tables



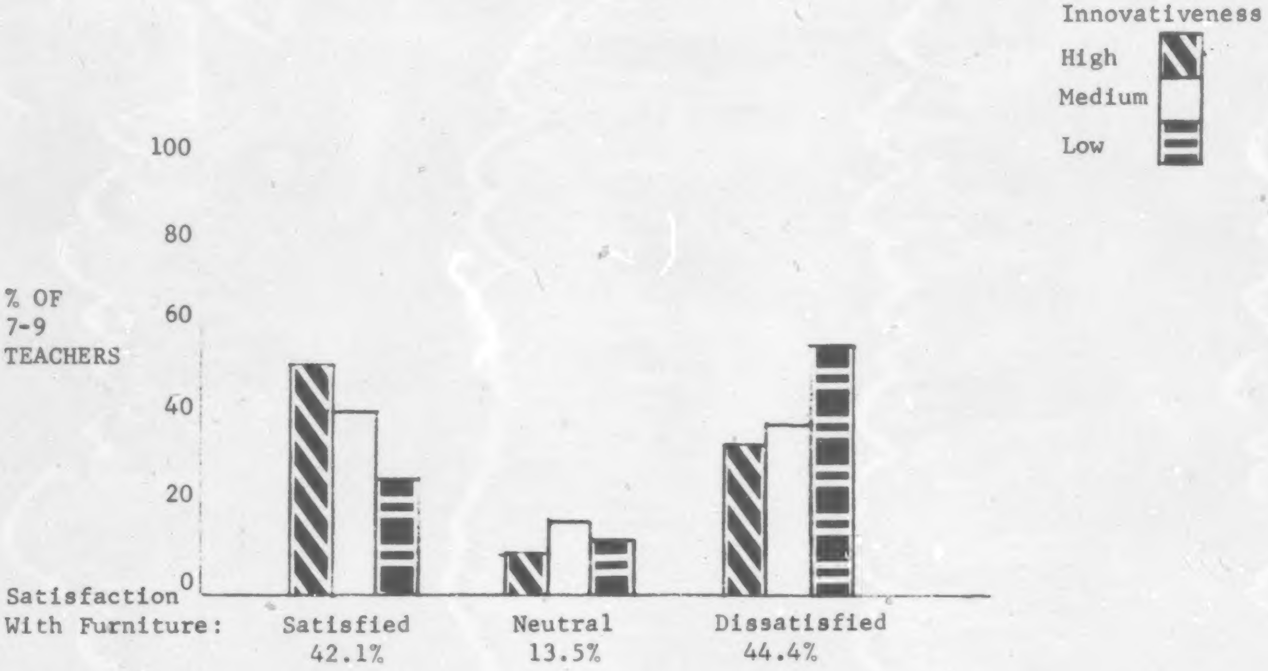
In addition more innovative teachers reported that students in their areas were making more use of audiovisual materials, especially films, filmstrips and slides, and audio equipment. Dramatic evidence of this relationship is presented in Chart 65.

CHART 65: Distribution Of K-6 Teachers By Innovativeness AND Ratings On Student Use of AV (AV Scale)



At the 7-9 level, teachers who had classes of 25 or less, who were teaching only one subject and who were in special facilities (e.g., science, art, music, etc.), tended to be high on the Innovativeness Scale. They were also more likely to be more satisfied with the interior appearance, the adequacy of the school layout and the school furniture than their less innovative colleagues. (Chart 66)

CHART 66: Distribution Of 7-9 Teachers By Innovativeness AND Satisfaction With Furniture



K-6 teachers who were low on the Innovativeness Scale were more likely to be in very fast growing schools, and to be more critical of the provisions for privacy for both teachers and students. Teachers at both school levels who were low on the Innovativeness Scale were more likely to prefer enclosed teaching areas.

Teachers seemed to make quite objective assessments of their own innovativeness. Those who regarded themselves as innovative were generally using more innovative teaching practices than their colleagues.

CHAPTER 12

FINDINGS RELATED TO SOME SPECIFIC STUDENT CHARACTERISTICS

The interrelationships among student attitudes toward school, toward open areas, and boredom were very strong at both school levels. For instance, students who were never bored were much more likely than other students to enjoy going to school and to enjoy working in open areas; they also tended to report favourably on working conditions and the social and physical environment. The direction and strength of the relationships were generally the same for all three factors. A detailed analysis is presented for only one of the factors - "like working in open areas" in order to conserve space.

Like Working In Open Areas

Students at both school levels who liked working in the open areas all or most of the time perceived that they got their own way at school more often, were more positive about liking school (see Chart 67) and were less often bored in school (see Chart 68). At the K-6 level, students who liked working in open areas reported that they had more free time in school.

CHART 67: Distribution Of K-6 Students By Attitude Toward Open Areas AND Attitude Toward School

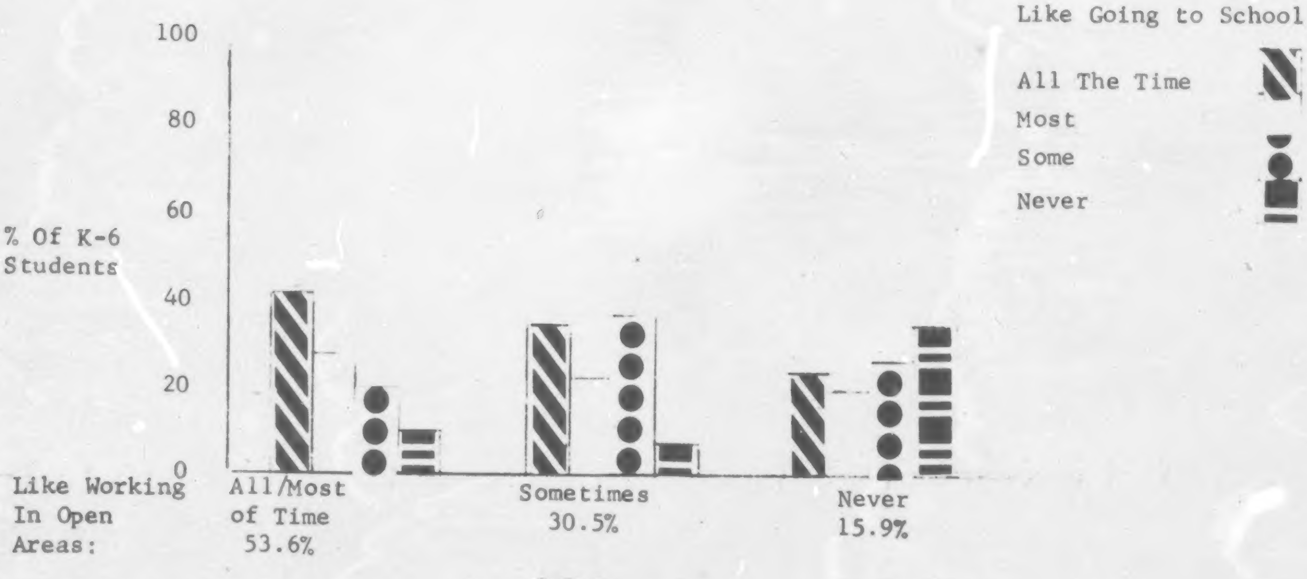
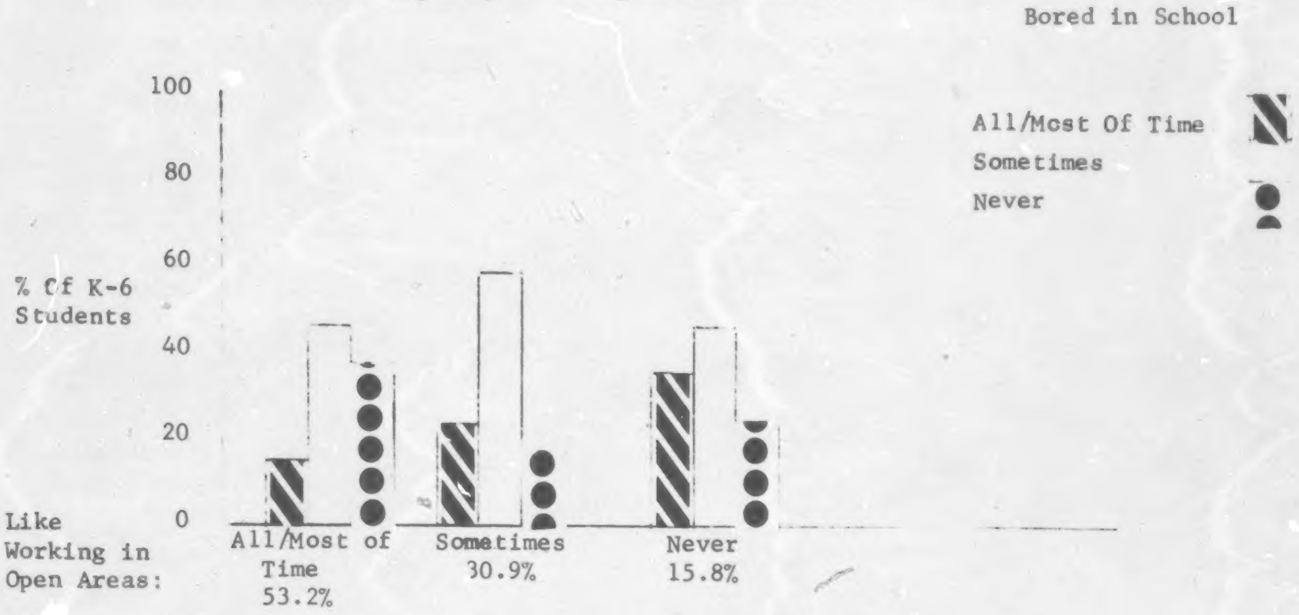


CHART 68: Distribution Of K-6 Students By Attitude Toward Open Areas AND Frequency Of Being Bored In School



At both levels, students who liked working in open areas were much more likely to report that their school was never too crowded and that they often had enough privacy. In addition they were more positive about the exterior and interior appearance, the school building as a whole, and the school furniture. These relationships are illustrated in Charts 69 and 70 for the K-6 students.

CHART 69: Distribution Of K-6 Students By Attitude Toward Open Areas AND Perceptions Of Crowdedness

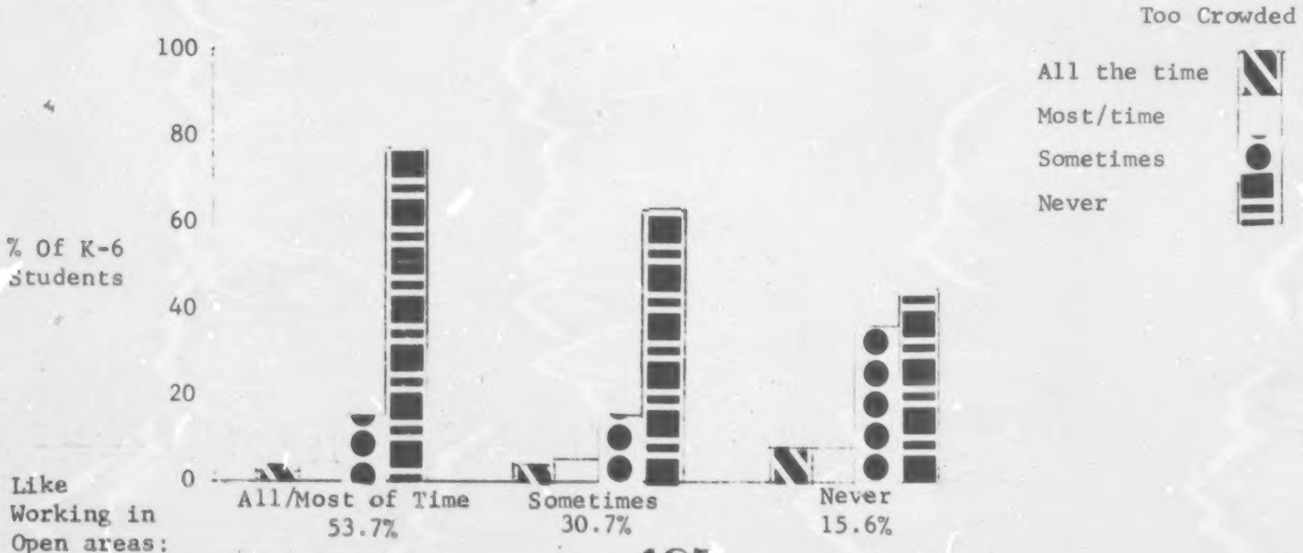
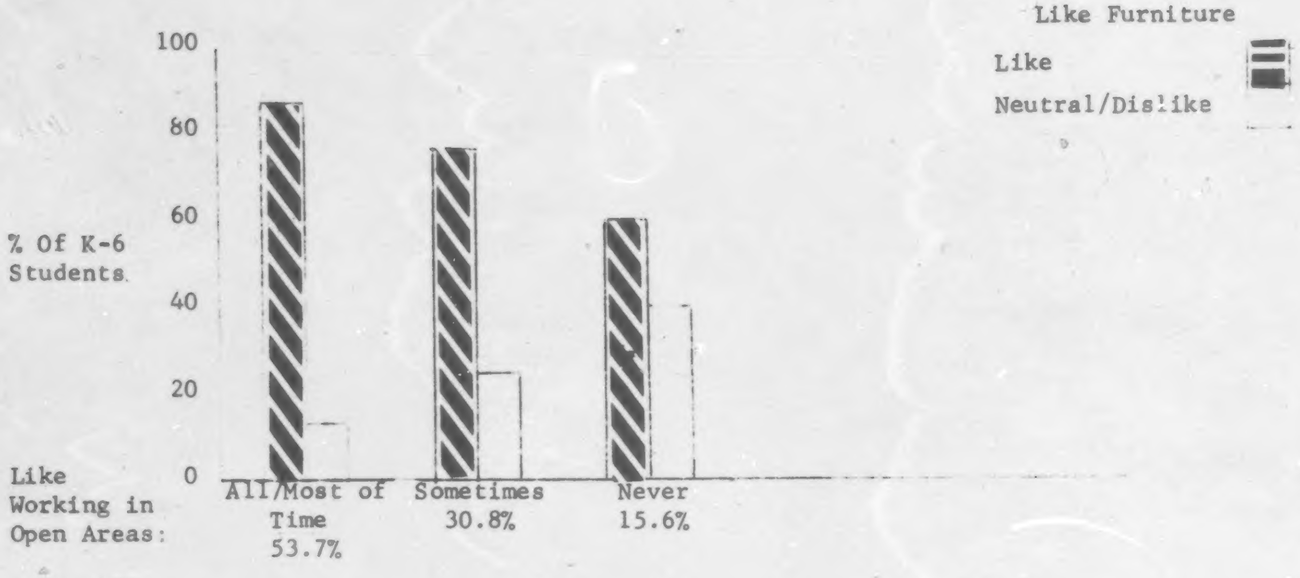
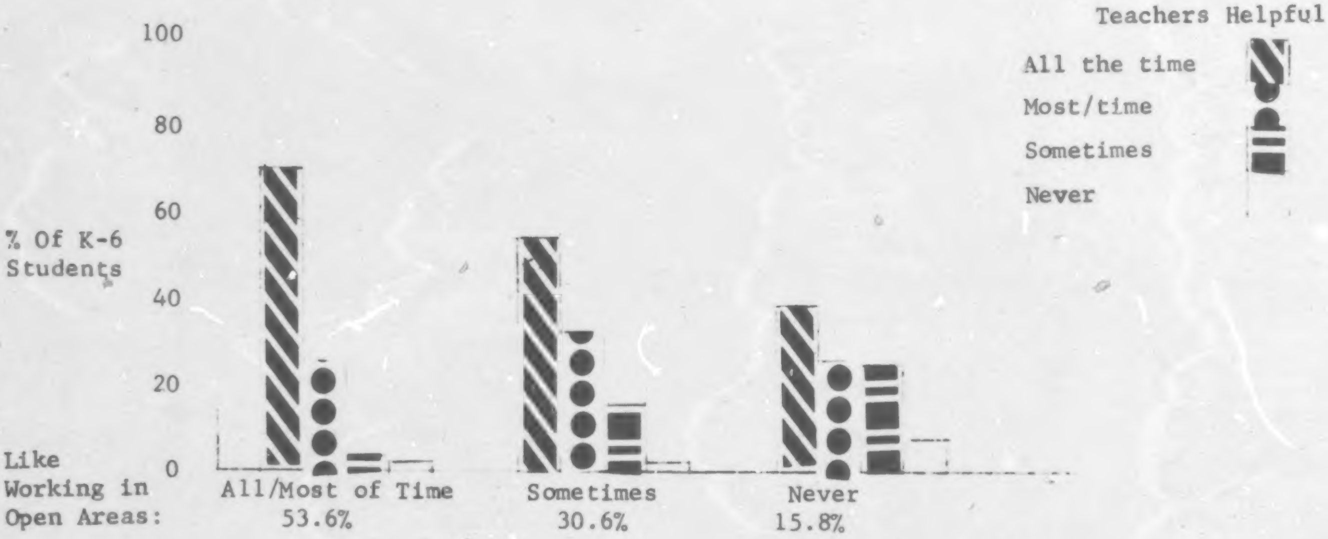


CHART 70: Distribution Of K-6 Students By Attitude Toward Open Areas AND Satisfaction With School Furniture



Students at the K-6 level who liked open areas were more positive about the friendliness of other students. There was a positive relationship between liking open areas and the helpfulness of teachers at both levels. Chart 71 illustrates the relationship at the K-6 level.

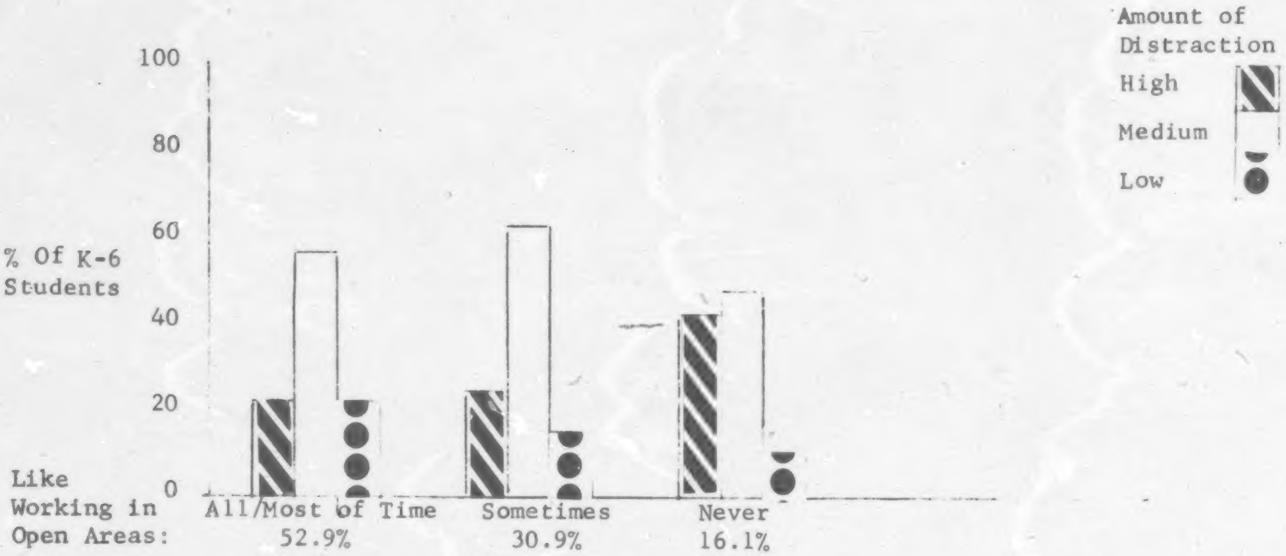
CHART 71: Distribution Of K-6 Students By Attitude Towards Open Areas AND Perceptions Of Teachers' Helpfulness



K-6 students who liked working in the open area, also reported visiting with more students. 7-9 Students who liked working in open areas all or most of the time were concerned about having their own work place, would like to work independently more often, and were more likely to make use of folding walls.

On the other hand, a different set of relationships appeared at both levels among students who reported that they "never" liked working in open areas. They were more likely to find their school too noisy, and to be bothered by talking, movement, fooling and noise in general. An example of these relationships is shown for K-6 in Chart 72.

CHART 72: Distribution Of K-6 Students By Attitude Towards Open Areas AND Own Class Distractions Scale



Moreover students at the 7-9 level who never liked working in open areas, tended also to report that they never worked in small groups, or independently but often with the whole class. They also made less use of seminar rooms and sinks.

At the K-6 level students who never liked working in open areas made more extensive use of film and television but were also more likely to report that they never rearranged shelves or book cases.

CHAPTER 13

OPENNESS OF PROGRAM

The results from the Dimensions of Schooling Questionnaire (DISC) are reported in this chapter. Teachers' perceptions of the extent to which their schools were characterised by open programs and the identification of factors associated with greater program openness are discussed.

1. Open Education

Advocates of open education stress that knowledge and skills are best learned as required. They deny that all students must acquire a core of common knowledge at the same pace or in the same sequence. They do not downgrade academic skills, but adopt an "open" perspective in which learning strategies become more important than facts. Techniques such as team-teaching, non-gradedness, individualized instruction, flexible scheduling, and independent study do not, in themselves, constitute open education. The essence of openness is, rather, participation and choice - for both students and teachers.

2. Dimensions Of Schooling Questionnaire (DISC)

DISC was designed to measure the extent to which a school and its programs typified an open approach to teaching.[1] For example, the questionnaire assessed the extent to which teachers and students were involved in such matters as determining general objectives, selecting instructional materials, and designing the physical and organizational arrangements that support the teaching-learning process.[2]

3. Program Openness In SEF Schools

The scoring method for DISC yields scores that range between 0 and 1; the higher the score, the more open the program. In this study, teachers' individual DISC scores ranged from 0.10 to 0.75; the distribution of scores was normal with a mean of 0.415. An average DISC score was calculated for each school (see Table 157). In the perceptions of teachers in this study, the average schools were characterised by moderately open programs of instruction.

The most interesting feature to emerge was the relationship between level of schooling and openness of program; openness was strongly associated with the K-6 level rather than with the 7-9 level. Accordingly, it was decided that the two levels would be dealt with separately.

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1. Traub, Ross, and others, "Closure on Openness: Describing and Quantifying Open Education," Interchange, 3 (Numbers 2-3, 1972): 69 - 84.
2. DISC is reproduced in Appendix III, p. 227-242.

Table 157: Distribution Of School DISC Scores[1]

Level of Schooling	Average DISC Scores By Schools	Rank By Openness Of Program
K-6	0.522	1
	0.509	2
	0.509	3
	0.507	4
	0.494	5
	0.443	6
	0.440	7
	0.434	8
	0.421	9
	0.418	10
	0.405	11
	0.386	13
	0.380	14
	0.375	16
7-9	0.392	12
	0.377	15
	0.373	17
	0.370	18
	0.368	19
	0.327	20
	0.323	21

N = 21, Mean of the School means = 0.417

4. Students

Relationships were sought between data from the students' questionnaires and school DISC scores. At the 7-9 level school DISC scores were not related significantly to any student characteristics. This does not establish that open education does not occur at the 7-9 level. Because DISC was developed at the elementary level, it may be possible that the instrument may not be particularly sensitive to the style of openness that may occur in 7-9 schools. Other explanations are also possible but cannot be tested from the available data.

At the K-6 level, significant relationships were found between program openness and students' socioeconomic neighbourhood, mother tongue, and number of schools attended. Greater openness was found in schools in low district incomes (Table 158), in schools where there was a higher proportion of students whose mother tongue was not English (Table 159), and who had not attended more than two different schools (Table 160).

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[1] One K-6 School did not provide DISC data.

Table 158: Distribution Of K-6 Students By School DISC Scores AND Socioeconomic Status

	Socio-economic Status	
Degree Of Program Openness	Low	High
High	77.8%	46.5%
Low	22.2%	53.5%
N	(405)	(142)

Table 159: Distribution Of K-6 Students By School DISC Scores AND Mother Tongue Of Students

	Students' Mother Tongue	
Degree Of Program Openness	% English	% Non-English
High	66.7	79.4
Low	33.3	20.6
N	(412)	(126)

Table 160: Distribution Of K-6 Students By School DISC Scores AND Number of Schools Attended

	Number Of Schools Attended	
Degree Of Program Openness	1 - 2	3 or More
High	74.2%	64.9%
Low	25.8%	35.1%
N	(283)	(262)

It was also found that students tended to be bored less often as program openness increased (Table 161), and that they were more likely to enjoy going to school (Table 162).

Table 161: Distribution Of K-6 Students By School DISC Score AND Frequency Of Boredom

	Students Bored In School	
Degree Of Program Openness	All/most of the time	Sometimes/ Never
High	60.0%	71.8%
Low	40.0%	28.2%
N	(115)	(426)

Table 162: Distribution Of K-6 Students By School DISC Score AND Students' Attitude Toward School

Degree Of Program Openness	Like Going To School All/most of the time %	 Sometimes/ Never %
High	74.4	62.7
Low	25.6	37.3
N	328	217

Schools with higher degrees of program openness did not give the students a sense of overcrowding (Table 163). This parallels a similar finding in the teachers' data.

Table 163: Distribution Of K-6 Students By School DISC Score AND Students' Perception Of School Spaciousness

Degree Of Program Openness	School Too Crowded % All/most of the time	 % Sometimes/ Never
High	52.3	71.4
Low	47.7	28.8
N	44	497

Another interesting finding in the students' data related to the contentious issue of noise and distractions in open area schools. In this study students were generally no more affected by distractions (talk, movement, noise, boisterous behaviour) in schools with a high DISC score than schools with a low DISC score. The only exception to this concerned distractions that emanated from the student's own class; Table 164 indicates that the relationship was somewhat tenuous.

Table 164: Distribution Of K-6 Students By School DISC Score AND Class Distractions Scale

Degree Of Program Openness	Bothered By Own Class Distractions % High on Scale	 % Medium on Scale	 % Low on Scale
High	67.2	67.2	80.0
Low	32.8	32.8	20.0
N	137	299	95

The data also indicated that in schools with higher degrees of program openness, students were more likely to be positive about the appearance of the school building and about the furniture, and to praise the library (Table 165).

Table 165: Distribution Of K-6 Students By School DISC Score AND Students' Satisfaction With Library

Degree Of Program Openness	Like Library % Like	 % Neutral/Dislike
High	70.9	51.5
Low	29.1	48.5
N	512	33

Several significant relationships were observed regarding use of facilities. In schools with open programs students were more likely to help plan furniture arrangements, to help move furniture, and to make more frequent use of the sinks. Furthermore, higher degrees of program openness were also associated with more frequent use of AV equipment (particularly film) and with more field trips. Moreover, students from schools with open style programs were more likely to use library facilities both as a whole class and in small groups or as individuals (Table 166).

Table 166: Distribution Of K-6 Students By School DISC Scores AND Use Of Library

Degree Of Program Openness	Visit Library Alone Or With Small Group % Less than 1 per week	 % 1 - 2 times a week	 % 3 or more times a week
High	52.0	76.6	80.7
Low	48.0	23.4	19.3
N	179	175	181

Finally, it was noted that students were more likely to work co-operatively as program openness increased (Table 167).

Table 167: Distribution Of K-6 Students By School DISC Scores AND Frequency Of Students Working Cooperatively

Degree Of Program Openness	Frequency Of Students Helping Each Other % Less than 1 per week	 % 1 - 2 times a week	 % 3 or more times a week
High	64.8	77.5	71.1
Low	35.2	22.5	28.9
N	301	142	90

5. Teachers

Teachers were categorized according to whether they scored high or low on DISC (the individual DISC score of 0.417 was taken as the lower limit of the "high" category) and the two groups were compared for significant differences in (a) their biographic characteristics, (b) the characteristics of their schools, (c) their evaluations of those facilities and (d) individual DISC scores, and the use made of various school facilities.

6. K-6 Teachers

(a) Biographic Characteristics Of K-6 Teachers: It was found that greater openness of program was associated with K-6 teachers who:

(i) preferred open-area architecture;
(ii) had been in their current positions for two or more years (Table 168);
(iii) had six or more years of teaching experience (Table 169) of which at least two years had been in an open-area school;
(iv) had requested that they be assigned to the school and the age group they presently taught;
(v) were high on the Innovativeness Scale (Table 170);
(vi) taught more than one grade level (Table 171).

Table 168: Distribution Of K-6 Teachers By Individual DISC Scores AND Experience In Present School

	Years In Current School	
	%	%
Degree Of Program Openness	1 year or less	2 years or more
High	57.1	74.2
Low	42.9	25.8
N	191	120

Table 169: Distribution Of K-6 Teachers By Individual DISC Scores AND Years Of Teaching Experience

	Amount Of Teaching Experience	
	%	%
Degree Of Program Openness	Up to 5 Years	6 Years or More
High	58.1	69.5
Low	41.9	30.5
N	160	151

Table 170: Distribution Of Teachers By Individual DISC Scores AND Innovativeness Scale

Degree Of Program Openness	Innovativeness Scale % High on Scale	 % Medium on Scale	 % Low on Scale
High	83.8	62.6	48.7
Low	16.7	37.4	51.3
N	90	99	117

Table 171: Distribution Of K-6 Teachers By Individual DISC Scores AND Number Of Grades Taught

Degree Of Program Openness	Number Of Grades Taught % One only	 % More than one
High	57.9	75.5
Low	42.1	24.5
N	209	102

These findings indicate that the implementation of an open program of education at the K-6 level was facilitated when teachers were positively disposed toward change.

(b) School Characteristics: It was found that program openness at the K-6 level was significantly associated with the number of years school had been operating, and the rate of growth in enrolment (Table 172 and Table 173).

Table 172: Distribution Of K-6 Teachers By Individual DISC Scores AND Number Of Years School Was In Operation

Degree Of Program Openness	No. of years operating % 3 Years	 % 1 Year
High	71.6	48.6
Low	28.4	51.4
N	204	107

Table 173: Distribution Of K-6 Teachers By Individual DISC Scores AND Rate Of Growth In Enrolment

Degree Of Program Openness	Rate Of Growth In Enrolment % Fast	 % Other
High	45.1	67.3
Low	54.9	32.7
N	51	260

Schools which had been operating longer, and which had lower rates of growth were more likely to have a larger proportion of teachers with high DISC scores.[1] Interestingly, schools which had either a high occupancy rate and a low occupancy rate were more likely to have a greater proportion of K-6 teachers with high DISC scores.

Table 174: Distribution Of K-6 Teachers By Individual DISC Scores AND Occupancy Rates

Degree Of Program Openness	Occupancy Rate % Within 12% of Capacity	% Within 15-22% of Capacity	% 30-70% Below capacity
High	70.2	48.6	73.0
Low	29.8	51.4	27.0
N	104	107	100

One conclusion that might be drawn from the data is that open education is not inhibited by the formula used to arrive at capacity figures. It is nonetheless obvious that facilities may become too cramped for the effective implementation of open education as the data on teachers' perceptions of roominess and furniture indicated.

(c) Evaluation Of School Facilities: It was found that greater program openness at the K-6 level was associated only with high satisfaction with the roominess of teaching areas and an abundance of tote boxes and tables. For example see Table 175.

Table 175: Distribution Of K-6 Teachers By Individual DISC Scores AND Teachers' Perceptions Of The Roominess Of Their Teaching Area

Degree Of Program Openness	Roominess Of Teaching Area % Superior	% Adequate	% Inadequate
High	76	63.3	51.5
Low	24	36.7	48.5
N	75	150	68

The amount of furniture placed in a given area (i.e., the furniture density) is perhaps as important a consideration in school design as the number of people (i.e., the population density) assigned to a space.

(d) Use Of School Facilities: K-6 Teachers data indicated that greater openness of programs was associated with more frequent use by students of seminar rooms and of audio-visual equipment (Table 176).

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1. This is in contrast with a finding by Seidman that "The operational life ... seems to be unrelated to the organizational climate." See Miriam R. Seidman, "Organizational Climate in Open-Space Elementary Schools," (Ed.D. Dissertation, Hofstra Univeristy), p. 131.

Table 176: Distribution Of K-6 Teachers By Individual DISC Scores AND Reported Student Use Of Audio-Visual Equipment (AV Scale)

Degree Of Program Openness	Student Use Of Audio-Visual Equipment % Low	% Medium	% High
High	40.9	58.6	73.7
Low	59.1	41.4	26.3
N	22	145	114

Greater openness was strongly associated with more frequent rearrangement of tables, storage containers and shelves.

Finally, it was found at the K-6 level that greater openness was associated with grades 5 and 6, with music and physical education programs, and with frequency of family grouping.

Table 177: Distribution Of K-6 Teachers By Individual DISC Scores AND Frequency Of Family Grouping

Degree Of Program Openness	Older Students Work With Younger % All/most of the time	% Sometimes	% Never
High	85	70.4	42.4
Low	15	29.6	57.6
N	40	159	92

7. 7-9 Teachers

At this level it was found that greater openness of program was associated with teachers who reported that they were progressive rather than traditional in style of teaching and who were high on Innovativeness Scale.[1]

Table 178: Distribution Of 7-9 Teachers By Individual DISC Scores AND Innovativeness Scale

Degree Of Program Openness	Innovativeness Scale % High	% Medium	% Low
High	83.3	62.6	48.7
Low	16.7	37.4	51.3
N	90	99	117

---

1. See Glossary.

While program openness was not found to be related significantly to general characteristics of intermediate schools (e.g., number of years in operation), it was related to specific characteristics. For example, greater openness of programs was strongly associated with lower pupil-teacher ratios.

Table 179: Distribution Of 7-9 Teachers By Individual DISC Scores AND Class Size

	Pupil-Teacher Ratio		
Degree Of Program Openness	% 25:1 or less	% 26-35:1	% 36:1 or more
High	53.1	22	7.7
Low	46.9	78	92.3
N	32	127	13

The finding, of course, is in accordance with the essence of open education: student participation in designing individually tailored learning programs becomes feasible only when teachers are able to deal with their students on an individual or small group basis. These results suggest that a ratio of 25:1 or less is conducive to achieving a high degree of program openness.

In addition, the data indicated that those teachers who perceived their schools' programs to be more open, tended as did teachers at the K-6 level, to rearrange furniture more frequently, to use family grouping more frequently, and to have students use AV equipment more frequently and to visit the library on a small group or individual basis more often.

Finally, greater openness of programs was achieved at the 7-9 level when teachers spent more time with their teaching teams.

IN SUMMARY: At the outset it was pointed out that the essence of the open approach to education lies in the principle that those most intimately involved in the instructing-learning process - that is, students and teachers - should be allowed to influence that process. The data obtained in this study indicated, in the first place, that the DISC Questionnaire does indeed measure the degree of program openness, because higher scores on the instrument consistently paralleled situations where students and teachers were more actively involved in structuring their educational environment and experiences. There tended to be more interaction among students and between students and teachers when DISC scores indicated greater degrees of program openness. Furthermore, there appeared to be greater flexibility in the techniques that were used to effect educational objectives: for example, in the less open programs, library facilities were more often than not visited by entire classes, whereas in the more open programs students were more likely to go to the library in small groups or individually. There were indications in the data (although not statistically significant) that higher DISC scores were in some measure associated with programs like Music, Art, Physical Education, and Shop - programs that might well be less structured than programs in other subjects.

Another important general finding was that students, even at the K-6 level where attention-span is probably less, do not appear to find that the open approach occasions more distractions than a conventional approach. More important, perhaps, is the finding that students tend to be happier when the open approach is used. However, it should be remembered that the analytical techniques used do not establish cause-effect relationships. Possibly the open approach is easier to effect with students and teachers who are more contented by nature or circumstance. Certainly the teachers associated with the more open programs tended to be self-selected.

The type of environment that appears to be supportive of openness, involves both flexibility of furnishings and sufficient space to accommodate the greater amount of movement that must logically accompany more frequent use of AV equipment, more visits to the library and more student interaction. The flexibility factor, moreover, appears to apply most to storage facilities: greater openness was most often associated with those environments where furnishings were rearranged most frequently and where teachers and students gave superior ratings to the adequacy and sufficiency of tote-boxes.

Another important conclusion is that openness cannot generally be achieved over night - even where students and teachers are favourably disposed towards it. In fact, it would seem that the open practices begin to evolve only after about two years.[1]

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[1] At the time the data for this study was collected, there was very little research on open education. Each current issue of Dissertation Abstracts International now carries several references to doctoral research on open education. Vincent Rogers lent the Metropolitan Toronto School Board a draft copy of a book to be published shortly which reviews past research: More Than Joy: What Research Says About Open Education, compiled by Lyn S. Martin, and with an introduction by Vincent R. Rogers. The Journal of Research and Development in Education had a special issue on Open Education (vol. 8, no. 1, Fall 1974); see particularly "Why Open Education Died" by Donald A. Myers, p. 60-67.

CHAPTER 14

IDEAL OPEN PLAN SCHOOL

People with experience in open areas and observers of open plan schools offer a variety of reasons for the successful operation of a particular open plan area or school. The 14 items used in the Ideal Open Plan School Scale are a distillation of experience and observations. Three items concerned students, three concerned teachers, two concerned principals and four concerned the building. Although most of the items are relevant for any kind of school, people in open plan schools stress these items as important elements for a successful open plan school.

The results from individual items in the Ideal Open Plan School Scale are displayed in Appendix III, p. 222. Characteristics of teachers who were high or low on the scale were discussed on pages 33-34.

1. School Characteristics

At the K-6 level, teachers who rated their schools high on the Ideal Open Plan Scale were more likely to work in schools which were small, growing rapidly and which were well below rated capacity. These were typically located in suburban neighborhoods. The results were less clear at the 7-9 level. The relevant data from K-6 teachers are presented in the table below.

Table 180: Distribution Of K-6 Teachers By Ideal Open Plan Scores AND School Size, Rate Of Growth In Enrolment And Level Of Occupancy

	IOP Scores	
	Low %	High %
School Size (Enrolment)		
Small	14.3	85.7
Medium	45.9	54.1
Large	70.2	29.8
Rate of Growth of Enrolment		
Fast	18.9	81.1
Other	56.8	43.2
Level of Occupancy		
Within 12% of capacity	74.3	25.7
15 - 22% below capacity	57.0	43.0
30 - 70% below capacity	23.1	76.9

2. Working Conditions

A higher proportion of teachers working in areas which were larger than a regular classroom gave their school "ideal" ratings. More "ideal" ratings were awarded by teachers who had access to an enclosed classroom while teachers whose teaching areas were frequently too noisy were likely to rate their school as "less ideal". K-6 teachers who frequently had a seminar room available or who were located close to a common area tended to rate their schools as "more ideal". Interestingly, the IOP Scale was not significantly related to class size, nor to extent of openness of the teaching area; the importance of having windows tended to decline for the teachers who rated their school high on the Scale.

3. Satisfaction With Environment

High scorers on the Ideal Open Plan Scale tended to like the appearance of the school and to rate room location, school layout, acoustics, lighting and atmosphere as superior and the furniture as satisfactory. At both school levels, low scorers on the IOP Scale were likely to claim there was never enough privacy for either teachers or students.

4. Use of Environment

At K-6 level, teachers who rated school higher on IOP Scale reported more use of audiovisual materials, particularly filmstrips and slides. At the 7-9 level, teachers who made more use of the library also rated the school "ideal".

There was more interaction amongst teachers who were high on the scale. In schools rated "ideal" teachers did more planning (K-6 level) and spent more time with their team (7-9 level).

IN SUMMARY: The results from the Ideal Open Plan Scale were quite compatible with the teachers' general assessment of working conditions and their evaluations of discrete aspects of the school environment.

CHAPTER 15

CANTER ENVIRONMENTAL ASSESSMENT

The overall teacher reaction to the school environment as a physical artifact was measured by applying the Canter Environmental Assessment Scale to the school building, the teaching area and the library.

The list of the ten bipolar adjectives which make up the Scale was identical to the list developed by Dr. David Canter, formerly with University Strathclyde, now with the University of Surrey.[1] The complete results for each adjective pair in the Scale are displayed in Appendix III, pages 224-226.

Each Scale was divided at the median score of all teachers into a positive score and a negative score.

Table 181: Distribution Of Teachers By Canter Environmental Assessment (Building Scale)

	% Overall	% K-6	% 7-9
Positive	49.4	49.2	49.8
Negative	50.6	50.9	50.2

Table 182: Distribution Of Teachers By Canter Environmental Assessment (Teaching Area Scale)

	% Overall	% K-6	% 7-9
Positive	50.9	54.1	45.2
Negative	49.2	45.8	54.9

Table 183: Distribution Of Teachers By Canter Environmental Assessment (Library Scale)

	% Overall	% K-6	% 7-9
Positive	49.1	52.3	43.6
Negative	50.8	47.6	56.4

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1. David Canter and Ross Thorne, "Attitudes to Housing: A Cross-Cultural Comparison," Environment and Behaviour, 4 (March 1972): 3-32. See also David Canter, "Architectural Psychology and School Design," Scottish Educational Studies 2 (No. 2, 1970): 87-94; David Canter and Roger Wools, "A Technique (continued)

The characteristics of teachers with positive or negative scores were discussed in Chapter 4, p. 34. In the remainder of this Chapter, relationships among the Environmental Assessment Scores and other factors are considered.

1. School Building

There was extreme variability from school to school in the teachers' rating of the school building on the Canter Environmental Assessment Scale. At the K-6 level the proportion of teachers giving their school high ratings varied from 12% to 87% while the range was from 26% to 74% at the 7-9 level. In the replacement schools, which were generally large and located in lower income districts, some 35% of the teachers gave their school building high ratings on the Canter Scale in comparison to 65% of teachers in the new schools.

At the 7-9 level a higher proportion of teachers who worked in larger areas (equivalent in size to 3 or more classrooms) gave their schools high ratings (60 - 67%) than those who worked in areas the size of one or two classrooms (34-47%).

Predictably, teachers who gave their school high ratings on the Canter Scale almost invariably gave specific characteristics of their school and teaching area superior ratings. They also made more use of the teacher work room and the library and reported higher use of films, slides and audio aids. The compatibility of the Canter Scale scores and the teachers' assessments of specific characteristics and features of the environment is encouraging evidence as to the general quality of the data and the stability of the relationships.

At the 7-9 level, teachers who rated themselves as highly innovative were more likely to score their school building high on the Canter Scale. The relationship was less apparent at the K-6 level; possibly it was muted by the presence of the "replacement schools".

2. Teaching Area

A consistent pattern of strong relationships was found between the teachers' assessment of their teaching areas (Canter Scale) and their evaluations of particular aspects of their physical environment (questionnaire). The results were quite compatible with those discussed in the previous section concerning the teachers' assessments of the overall building.

Teachers differed in their assessment of their teaching area both by level and by type of facility. The facility which was rated highly by most teachers was the library, this was especially true at the K-6 level. The general results for four types of teaching areas are summarized in the following table.

Table 184: Proportion Of Teachers Making Highly Positive Assessments Of Their Teaching Area

Type Of Facility	K-6		7-9	
	%	N	%	N
Special Facilities (gym, shops, etc.)	37	(8)	70	(68)
Library	94	(16)	71	(7)
Seminar Rooms	33	(9)	31	(13)
Other (including classrooms)	53	(277)	28	(92)
N		310		180

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1. (continued) for the Subjective Appraisal of Buildings," Building Science 5 (1970): 187-198.

At the 7-9 level most teachers who worked in special facilities made high assessments of their areas (70%), as did those who worked in the libraries (71%). Approximately half the K-6 teachers working in all purpose teaching areas gave their areas high assessments compared to one quarter at the 7-9 level.

Teachers who taught only one subject were more likely to make high assessments of their areas then those who taught more than one subject. At the 7-9 level many teachers who teach only one subject work in specialized facilities. This may account for the extreme difference in the proportions of teachers in special facilities who assessed their area positively (70%) vs other (classroom) facilities (28%).

At the 7-9 level teachers were responding more positively in larger areas, which were frequently also more specialized. About one-third of teachers in areas equivalent in size to one classroom made highly positive assessments, compared to one-half in areas of 2-3 classroom size, and three-quarters in areas which were 4 or more classrooms in size. Large areas are more likely to be enclosed as many 7-9 teachers in open areas (0-1 wall) responded positively (53%) as in enclosed areas (57%). Those in areas with two or three walls were least positive about their teaching area (24% and 31%). These relationships between assessment of teaching area and its size and degree of enclosure did not appear at the K-6 level.

At both levels, teachers who rated their teaching area positively indicated that they had an abundance of furniture and that it was of superior quality.

As was the case with the assessment of the overall school building, a higher proportion of teachers rated the teaching area positively in schools which were smaller, which had enrolments well below rated capacity and at the K-6 level, which were located in higher income districts.

Teachers who defined themselves as more innovative assessed their teaching area more positively. Both of these characteristics were also positively related to the use of audiovisual materials.

3. Library

There was extreme variation from school to school in the proportion of K-6 teachers who offered positive assessments, from 9% to 79%. At the 7-9 level the school to school differences were relatively insignificant.

Few relationships appeared with other factors except those with the evaluation of specific aspects of the school or teaching area. Most of these appeared only at the K-6 level. The relationships were all in the expected direction; those evaluating the library positively being generally positive toward other specific environmental characteristics.

The absence of strong relationships with school size, rate of occupancy and district income indicate that a general response set was not operating and that the teachers were discriminating in their judgments. Their assessment on the library thus appeared to be relatively independent of the circumstantial characteristics of the school such as its size and location.

CONCLUSIONS

SEF SCHOOLS

Some of the findings are distressing; in a number of cases the facilities are more open than the programs warrant; the built-in adaptability of the SEF system seems to be rarely used to adjust the facility to the program; many users, especially teachers expressed dissatisfaction with the atmosphere; many users, especially 7-9 teachers, were dissatisfied with the casework and with noisy conditions.

Other findings were quite gratifying; some schools seem to be taking full advantage of the flexible open environments; 7-9 students were very pleased with the facilities on the whole; the libraries, casework and audio-visual equipment are being used fairly intensively; users are generally quite positive about the lighting and interior appearance.

OPEN PLAN SCHOOLS

Some open plan schools are working very well to accommodate a variety of open style educational programs. However, it takes several years to develop a program in an open environment. The noise problem is very real to many users, especially those in large schools where the enrolment is close to rated capacity. Declining enrolment may be a very welcome phenomenon for users of some open plan schools. The evaluation of open plan environments is complicated by the strong interrelationships with program. There is no clear magic formulae for making open plan work. But neither is there any evidence that it can't or won't work, given patient and persistent staff and appropriate administrative support. In the schools, at the time of the study, most students liked schools and were rarely bored.

PROFESSIONAL DEVELOPMENT

The results of this investigation coupled with continuing demand indicate that the pamphlet "Hints for Survival in Open Plan Schools" remains a useful aid in pre-service and inservice professional development. Two of the instruments used in this study; the Canter Environmental Assessment Scale and the Ideal Open Plan School Scale may have considerable potential in professional development work and as aids in planning school programs and environments. These instruments as well as a brief annotated bibliography would be useful to include in a revised version of the "Hints for Survival" pamphlet.

RECOMMENDATIONS

1. In schools where the enrolment approaches or exceeds the rated capacity, and where noise interferes with teaching and learning, additional enclosed spaces should be provided.

2. In schools where the program is no longer compatible with the layout, provision should be made to modify the layout thus utilizing the built-in flexibility of the SEF system and improving working conditions for teachers.

3. Folding partitions which provide full acoustical separation (and are accordingly expensive) should be provided only where the need can be clearly established.

4. Schools should be planned with a balance of open and enclosed spaces.

5. Future research on open plan and open education should include studies of the quality of interaction among the users and their disposition toward sharing information and working cooperatively.

6. Experimental research should be considered which would involve the physical modification of school environments to match the requirements of individual school programs and the investigation of possible effects of such changes, on user attitudes and student performance.

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*Note: The instruments are reproduced here in a slightly different version than the original in order that the frequency of overall responses and responses by school level may be given. Many questions had more response categories than are shown but it was sometimes necessary to combine or omit answers to provide a sufficiently large number of answers for analysis.

Copies of the original instruments may be obtained by writing to the Metropolitan Toronto School Board, 155 College Street, Toronto M5T 1P6, Ontario, Canada.

APPENDIX I

STUDENT QUESTIONNAIRE

Frequency of Response.
(Some response categories have been combined; non-responses were omitted from calculations.)

1. Name of School?

111
112
113
114

211
212
213

221
222
223
224
225
226

311
312
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315
316
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318
319

321

		School Level	
	% OVERALL	% K-6	% 7-9
2. Are you a boy or a girl?			
1. Boy	50.6	50.6	51.1
2. Girl	48.9	49.4	48.9
3. How old are you today?			
1. 10 or less	33.9	57.5	-
2. 11 - 12 years	22.5	42.3	3.7
3. 13 or more	43.5	0.2	96.3
4. Were you born in Canada?			
1. Yes	76.9	75.9	80.8
2. No	21.8	24.1	19.2
5. Was English the first language you learned to speak?			
1. Yes	74.5	76.8	77.4
2. No	22.2	23.2	22.6
6. What is your grade level in school?			
1. 5th grade	58.5	100.0	-
2. 8th grade	40.4	-	99.7
7. How many different schools have you attended?			
1. 1 - 2	40.7	51.7	25.5
2. 3 - 4	36.1	31.3	43.3
3. 5 or more	22.8	17.0	31.3

	% OVERALL	% K-6	% 7-9
8. How much do you like the look of the outside of your school?			
1. I like it a lot	40.0	52.1	23.5
2. I like it a little	27.0	28.8	24.8
3. Neutral / dislike	32.3	19.1	51.8
9. How much do you like the look of the inside of your school?			
1. I like it a lot	71.2	74.9	65.9
2. I like it a little	19.3	16.8	22.9
3. Neutral / dislike	9.4	8.3	11.2
10. How important to you is the look of your school?			
1. Very important	30.7	35.4	24.4
2. Important	37.9	37.3	39.1
3. Neither important nor unimportant	21.1	17.8	26.1
4. Unimportant	9.9	9.6	10.4
11. Considering all the school buildings you know, how much do you like this one?			
1. I like it a lot	62.9	63.4	62.7
2. I like it a little	24.4	26.0	22.4
3. Neutral / dislike	12.3	10.6	14.9
12. Do you like the school library or resource centre?			
1. I like it	82.5	93.9	66.8
2. Neutral / dislike	17.1	6.1	33.2
13. Do you like the place where you eat lunch in school?			
1. I never eat lunch at school	45.1	-	-
2. I like it	33.3	66.5	59.1
3. Neutral / dislike	20.9	33.5	40.9
14. Do you like your coatracks?			
1. No coatracks in our school	39.1	-	-
2. I like them	43.3	72.5	47.8
3. Neutral / dislike	17.2	27.5	52.2

	% OVERALL	% K-6	% 7-9
15. Do you like your lockers?			
1. No lockers at our school	58.9	-	-
2. I like them	27.2	100.0	66.4
3. Neutral / dislike	13.7	-	33.6
16. Do you like the furniture in your school?			
1. I like it	71.7	79.4	61.3
2. Neutral / dislike	27.9	20.6	38.7
17. Is your school too warm?			
1. Often	8.4	9.4	7.0
2. Sometimes	64.2	66.6	62.2
3. Never	26.6	24.0	30.8
18. Is your school too cold?			
1. Often	5.4	3.7	8.0
2. Sometimes	45.0	37.9	55.9
3. Never	49.0	58.5	36.2
19. Is it too noisy for you in your school?			
1. Often	21.1	27.5	12.2
2. Some of the time	67.6	64.1	73.8
3. Never	10.6	8.4	14.0
20. Are you bothered by people talking in your class?			
1. Often	19.4	24.4	12.6
2. Some of the time	60.1	62.2	58.5
3. Never	19.6	13.5	28.9
21. Are you bothered by people moving around in your class?			
1. Often	8.5	10.5	5.8
2. Some of the time	42.8	41.9	45.0
3. Never	47.8	47.5	49.3

	% OVERALL	% K-6	% 7-9
22. Are you bothered by people fooling around in your class?			
1. Often	29.9	36.4	21.3
2. Some of the time	53.1	48.9	60.3
3. Never	16.1	14.7	18.5
23. Are you bothered by noise in your class?			
1. Often	18.6	22.2	13.8
2. Some of the time	62.4	61.5	64.8
3. Never	18.3	16.3	21.5
24. Are you bothered by people talking in other classes?			
1. Often	27.8	35.2	17.8
2. Some of the time	47.3	43.0	54.5
3. Never	24.0	21.8	27.8
25. Are you bothered by people moving around in other classes?			
1. Often	10.6	12.8	7.8
2. Some of the time	34.2	31.9	38.0
3. Never	54.5	55.3	54.3
26. Are you bothered by people fooling around in other classes?			
1. Often	16.8	21.6	10.3
2. Some of the time	44.4	41.7	49.3
3. Never	38.0	36.8	40.5
27. Are you bothered by noise from other classes?			
1. Often	22.1	29.6	11.5
2. Some of the time	58.4	51.9	68.3
3. Never	19.1	18.5	20.2
28. Is it too crowded for you in your school?			
1. Often	8.8	8.3	9.8
2. Some of the time	30.1	23.5	40.4
3. Never	60.2	68.3	49.9

	% OVERALL	% K-6	% 7-9
29. Do you have enough privacy in this school?			
1. Often	37.5	33.4	44.4
2. Some of the time	41.3	44.4	38.2
3. Never	19.9	22.1	17.5
30. How often do you work in small groups in this school?			
1. Often	28.7	36.4	18.8
2. Some of the time	64.7	59.8	73.9
3. Never	5.1	3.7	7.3
31. How much of the time would you like to be working in small groups?			
1. Often	49.8	47.1	54.6
2. Some of the time	42.5	44.1	40.9
3. Never	7.0	8.9	4.5
32. How often do you work with the whole class in this school?			
1. Often	53.6	45.8	65.9
2. Some of the time	40.3	49.0	28.8
3. Never	5.2	5.2	5.3
33. How much of the time would you like to be working with the whole class?			
1. Often	33.1	39.1	24.9
2. Some of the time	52.8	46.7	62.3
3. Never	13.5	14.2	12.7
34. How often do you work independently in this school?			
1. Often	48.0	45.5	53.0
2. Some of the time	44.1	48.2	39.8
3. Never	6.5	6.2	7.2
35. How much of the time would you like to be working independently?			
1. Often	55.6	58.5	53.8
2. Some of the time	36.2	33.4	41.5
3. Never	6.6	8.2	4.8

	% OVERALL	% K-6	% 7-9
36. In your school do you have a desk or table of your very own?			
1. Often	37.6	44.7	27.7
2. Some of the time	18.2	17.9	18.7
3. Never	43.9	37.4	53.6
37. How important is it for you to have a desk or table of your very own?			
1. Very important	25.1	35.8	10.2
2. Important	20.9	25.3	14.9
3. Neither important nor unimportant	27.6	21.9	36.1
4. Unimportant	25.9	17.0	38.8
38. Do you like working in the open areas of your school?			
1. All the time	32.0	33.9	29.4
2. Most of the time	25.4	19.7	33.8
3. Some of the time	29.4	30.6	28.6
4. Never	12.7	15.8	8.2
39. The students in this school are friendly.			
1. All the time	13.7	13.3	14.5
2. Most of the time	47.6	41.0	57.6
3. Some of the time	34.5	40.8	25.9
4. Never	3.7	4.9	2.0
40. Teachers in this school are helpful.			
1. All the time	45.7	60.1	25.0
2. Most of the time	33.9	27.2	43.8
3. Some of the time	17.3	10.6	27.0
4. Never	3.0	2.1	4.3
41. In this school how often do you get your own way?			
1. All the time	1.0	1.0	1.0
2. Most of the time	13.4	11.9	15.9
3. Some of the time	56.1	53.9	60.5
4. Never	28.6	33.2	22.7

42. How often are you bored in school?

	% OVERALL	% K-6	% 7-9
1. All the time	6.8	7.4	6.3
2. Most of the time	13.6	13.3	14.3
3. Some of the time	56.3	49.7	66.8
4. Never	22.5	29.6	12.8

43. Do you like going to school?

	% OVERALL	% K-6	% 7-9
1. All the time	29.4	35.8	20.4
2. Most of the time	33.0	24.9	44.8
3. Some of the time	26.1	25.9	26.6
4. Never	11.2	13.4	8.2

44. Since the school year began, how many times have you helped plan the arrangement of furniture in your school?

	% OVERALL	% K-6	% 7-9
1. Never	56.6	54.2	61.1
2. Once	16.1	18.6	13.0
3. 2 - 3 times	16.7	17.9	15.5
4. 4 or more times	9.7	9.3	10.5

45. Since the school year began, how many times have you helped move the furniture in your school?

	% OVERALL	% K-6	% 7-9
1. Never	25.8	26.3	25.7
2. Once	21.0	22.6	19.2
3. 2 - 3 times	29.9	31.9	27.4
4. 4 or more times	22.6	19.1	27.7

46. Since the school year began, how many times have you moved a shelf in a cupborad or bookcase in your school?

	% OVERALL	% K-6	% 7-9
1. Never	57.4	56.1	61.1
2. Once	19.3	20.5	18.2
3. 2 - 3 times	14.1	15.3	12.9
4. 4 or more times	7.9	8.1	7.8

47. Since the school year began, how many times have you gone on a field trip?

	% OVERALL	% K-6	% 7-9
1. Never	14.3	14.6	14.4
2. Once	23.9	27.5	19.6
3. 2 times this school year	23.0	19.9	28.2
4. 3 or more times	37.3	37.9	37.8

	% OVERALL	% K-6	% 7-9
48. Since the school year began, how many times have you helped to make rules in your school?			
1. Never	69.4	65.0	76.5
2. Once this school year	18.2	21.6	13.5
3. 2 or more times	11.9	13.4	10.0
49. Since the school year began, how many times have you opened or closed a folding or sliding wall between rooms in your school?			
0. No folding or sliding walls between rooms in my school	26.7	-	-
1. Never	50.2	74.0	63.1
2. Once	11.1	16.5	14.0
3. 2 or more times	11.0	9.6	22.9
50. On the average, how often do you use a sink in your class areas?			
0. No sinks in any of my class areas	10.2	-	-
1. Never	7.4	7.0	10.2
2. Sometimes, but less than once a week	40.8	49.9	40.1
3. 1 - 2 times a week	19.9	20.9	24.7
4. 3 or more times	20.8	22.2	25.0
51. On the average, how often do you visit the school library or resource centre with your class?			
1. Never	11.7	9.5	15.5
2. Sometimes, but less than once a week	36.4	29.1	48.1
3. 1 - 2 times a week	36.9	45.7	26.2
4. 3 - 4 times a week	7.3	8.4	6.0
5. 5 or more times	6.0	7.3	4.2
52. On the average, how often do you visit the school library or resource centre by yourself, or with a small group?			
1. Never	7.6	9.2	5.5
2. Sometimes, but less than once a week	26.6	23.2	32.1
3. 1 - 2 times a week	28.9	31.3	26.4
4. 3 - 4 times a week	21.5	21.9	21.4
5. 5 or more times	14.3	14.3	14.7
53. On the average, how often do you help other students with their work?			
1. Never	10.3	14.6	4.8
2. Sometimes but less than once a week	26.1	30.4	21.3
3. 1 - 2 times a week	25.3	23.8	28.5
4. 3 - 4 times a week	17.8	15.5	21.8
5. 5 or more times	18.7	15.7	23.8

54. On the average, how often do other students help you with your work?

	% OVERALL	% K-6	% 7-9
1. Never	14.6	19.2	8.8
2. Sometimes, but less than once a week	34.9	36.8	33.9
3. 1 - 2 times a week	28.2	27.0	31.2
4. 3 - 4 times a week	13.8	11.5	17.6
5. 5 or more times	6.7	5.5	8.5

55. On the average, how often do you have free time in school?

	% OVERALL	% K-6	% 7-9
1. Never	14.8	8.1	24.9
2. Sometimes, but less than once a week	30.0	28.4	33.2
3. 1 - 2 times a week	30.8	32.5	29.5
4. 3 - 4 times a week	13.3	16.8	8.6
5. 5 or more times	9.8	14.2	3.8

56. On the average, how often do you use a seminar room?

	% OVERALL	% K-6	% 7-9
0. No seminar rooms in any of my class areas	1.5	-	-
1. Never	21.0	21.0	22.3
2. Sometimes, but less than once a week	46.5	42.2	55.0
3. 1 - 2 times a week	20.2	25.0	14.8
4. 3 or more times	9.9	11.8	8.0

57. On the average, how often do you see a movie in school?

	% OVERALL	% K-6	% 7-9
1. Never	6.0	5.7	6.7
2. Sometimes, but less than once a month	37.1	35.2	40.9
3. 1 - 2 times a month	32.1	34.5	29.7
4. 3 or more times a month	23.6	24.7	22.7

58. On the average, how often do you view slides or filmstrips in school?

	% OVERALL	% K-6	% 7-9
1. Never	11.9	14.1	9.0
2. Sometimes, but less than once a month	31.2	38.1	42.4
3. 1 - 2 times a month	29.7	29.9	30.7
4. 3 or more times a month	17.6	18.0	18.0

59. On the average, how often do you use a record player, tape recorder or listening station in school?

	% OVERALL	% K-6	% 7-9
1. Never	24.2	24.0	25.2
2. Sometimes, but less than once a month	32.7	29.2	38.7
3. 1 - 2 times a month	21.6	25.4	16.7
4. 3 or more times a month	20.3	21.4	19.5

	% OVERALL	% K-6	% 7-9
60. On the average, how often do you view a TV program in school?			
1. Never	44.9	38.3	55.8
2. Sometimes, but less than once a month	32.3	29.2	37.8
3. 1 - 2 times a month	9.6	13.1	5.0
4. 3 or more times a month	11.8	19.4	1.6
61. On an average day, how many students do you work with in school?			
1. Under five students	38.4	40.5	36.9
2. 11 - 25	34.4	36.9	32.2
3. Over 25	25.6	22.6	30.9
62. On an average day, how many students do you visit with in school?			
1. Under five students	44.6	58.0	28.8
2. 5 - 10 students	20.8	20.4	22.8
3. 11 - 25	14.3	11.9	18.5
4. over 25	17.7	9.7	29.8
63. On an average day, how many students do you play with in school?			
1. Under five students	34.6	36.0	33.8
2. 5 - 10 students	37.8	40.0	35.8
3. 11 - 25	18.1	17.7	19.1
4. over 25	8.3	6.3	11.3
64. On an average day, how many teachers do you spend time with in school?			
1. One teacher	21.0	26.7	13.8
2. Two teachers	22.3	34.7	5.5
3. 3 - 5	34.2	37.5	30.8
4. 6 or more	20.9	1.1	49.9

65. What would you tell a visitor about your open plan school?

APPENDIX II

CODING OF STUDENT OPEN-ENDED QUESTION

Item	Code
Intelligible Response to Q65	0. No response 1. Yes 2. No
Is Q65 Response evaluative? (include all general and specific judgements e.g. I like it, it is confusing)	0. No response 1. Yes - positive 2. Yes - neutral 3. Yes - mixed 4. Yes - negative 5. Not evaluative
Does Q65 response refer to open plan? (including 'we have no walls' - neutral 'wish we had walls' - negative 'cannot concentrate' - negative 'see your friends' - positive -- but *excluding* specific noise or crowding references)	0. No response 1. Yes - positive 2. Yes - neutral 3. Yes - mixed 4. Yes - negative 5. No reference to topic[1]
Does Q65 response refer to noise?	
Does Q65 response refer to crowding?	
Does Q65 response refer to carpet?	
Does Q65 response refer to library facilities or resource centre? (*excluding* program)	
Does Q65 response refer to gym facilities? (*excluding* program)	
Does Q65 response refer to playing field, yard, games, sports, etc.?	
Does Q65 response refer to furniture? (*excluding* desks)	
Does Q65 response refer to desks?	

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[1] All remaining coding categories are identical to this set.

Item

Does Q65 response refer to AV equipment?

Does Q65 response refer to facilities in general? (excluding open plan, walls noise, crowding, gym, library, furniture, AV equipment) - e.g. layout, well built, modern, colour, windows, common area, seminars, appearance, air conditioning.

Does Q65 response refer to other students?

Does Q65 response refer to principal?

Does Q65 response refer to teacher(s)?

Does Q65 response refer to program? (including any specific subject or "activities" or comments about learning, getting help, working together)

Does Q65 response refer to discipline? (e.g. detention room, the rules, etc.)

Does Q65 response refer to freedom? (including freedom of movement, freedom of choice, 'no one bothers you', etc.)

APPENDIX III

TEACHER QUESTIONNAIRE

Frequency of Response.
(Some response categories have been combined; non-responses were omitted from calculations.)

1. Name of school?

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		School Level	
	% OVERALL	% K-6	% 7-9
2. Age?			
1. 30 or less	62.1	67.4	52.9
2. 31 or more	37.9	32.5	47.2
3. Sex?			
1. Female	61.9	73.6	41.5
2. Male	38.1	26.4	58.5
4. What is your position in this school?		# OF TEACHERS [1]	
1. Principal	(21)	(15)	(6)
2. Vice-Principal	(10)	(6)	(4)
3. Guidance Counsellor	(4)	(2)	(2)
4. Chairman	(41)	(7)	(34)
5. Librarian	(21)	(15)	(6)
6. Subject(s) teacher	(360)	(227)	(133)
7. Kindergarten teacher (junior or senior)	(45)	(45)	(0)
8. Special teacher (e.g. Resource teacher, special English, special education, remedial reading, speech teacher, etc.)	(29)	(19)	(10)
5. With what grade levels do you work?			
1. Junior Kindergarten/senior kindergarten	17.0	26.8	0.0
2. Primary (1 or 2 or 3, or any combination of these)	36.9	58.1	0.0
3. Grade 4	21.7	34.2	0.0
4. Grade 5	22.3	35.1	0.0
5. Grade 6	18.2	28.6	0.0
6. Grade 7	36.3	3.8	92.8
7. Grade 8	34.5	-	92.8
8. Grade 9	16.5	-	43.6
No. of grade levels: 1. Only one	44.9	64.9	10.3
2. More than one	55.1	35.1	89.7

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1. For this question only raw numbers rather than percentages are given.

6. What subjects do you teach?

	% OVERALL	% K-6	% 7-9
1. Only one	36.2	23.6	57.2
2. More than one	63.8	76.4	42.8
0. Does not apply--I teach in the classroom less than a quarter of my time.			
1. Art	26.1	37.3	7.3
2. English Language Arts	64.5	77.0	43.6
3. French	6.5	5.0	8.9
4. History/Geography/Social Sciences	42.8	54.7	22.9
5. Home Economics	2.5	0.7	5.6
6. Industrial arts/shop	2.9	0.7	6.7
7. Mathematics	56.8	72.7	30.2
8. Music	18.6	24.7	8.4
9. Physical education	21.7	27.3	12.3
10. Science	30.5	40.3	14.0
11. Kindergarten	9.6	15.3	0.0

7. Where do you spend most of your working day?

	% OVERALL	% K-6	% 7-9
1. Special facilities	15.5	2.6	37.8
2. Library	4.7	5.2	3.9
3. Seminar	4.5	2.9	7.2
4. Other teaching area	75.3	89.4	51.1

8. How large is the teaching area in which you spend most of your working day?

	% OVERALL	% K-6	% 7-9
1. Equivalent in size to one regular classroom	52.6	57.2	44.2
2. Equivalent in size to two regular classrooms	20.7	19.9	22.1
3. Equivalent in size to 3-4 regular classrooms	17.4	13.2	25.0
4. Equivalent in size to five or more regular classrooms	9.3	9.6	8.7

9. How open is the teaching area in which you spend most of your working day?

	% OVERALL	% K-6	% 7-9
1. 0-1 wall enclose my teaching area	24.1	31.9	9.9
2. Two sides of my teaching area have walls	24.3	28.4	16.9
3. Three sides of my teaching area have walls	23.0	24.2	20.9
4. Four sides of my teaching area have walls	28.6	15.5	52.3

10. How many years of formal education beyond secondary school have you had? (Include university, teachers' college, college of applied arts and technology, etc.)

	% OVERALL	% K-6	% 7-9
1. 3 or less	46.6	59.2	24.7
2. 4 years	28.3	25.6	33.0
3. 5 or more	25.1	15.2	42.3

	% OVERALL	% K-6	% 7-9
11. Total number of years teaching experience?			
1. 2 or less	19.9	21.2	17.5
2. 3-5 years	27.8	28.9	25.8
3. 6-10 years	26.3	27.4	24.2
4. 11 or more	26.1	22.4	32.5
12. How much of your teaching experience has been in open areas?			
1. None	23.5	22.8	24.9
2. 1 or less	29.0	32.5	22.8
3. 2 years	21.1	14.2	33.2
4. 3 or more	26.4	30.5	19.2
13. How long have you worked at this school?			
1. Since September 1972 or later	33.4	36.6	27.8
2. 1 or less	34.0	23.9	51.5
3. Two years plus current year	21.0	24.5	14.9
4. Three years or more	11.6	15.0	5.7
14. What kinds of in-service training related to working in open plan schools have you had?		% REPORTING YES	
0. Does not apply--have not had any special in-service training			
1. Staff meetings	78.3	77.7	79.7
2. Workshops	38.9	38.9	39.0
3. Visits to other schools	79.6	81.1	76.3
4. Special courses	7.7	7.7	7.6
5. Systematic reading	15.1	13.5	18.6
		# OF KINDS	
1. None	26.3	18.6	39.5
2. One	18.2	20.1	14.9
3. Two	29.5	33.4	22.6
4. 3 or more	26.1	27.8	23.1
15. Did you ask to teach in this school?			
1. Yes	49.2	38.8	67.2
2. No	50.8	61.2	32.8
16. Did you ask to teach the age group you now teach?			
1. Yes	79.0	76.0	84.5
2. No	21.0	24.0	15.5

	% OVERALL	% K-6	% 7-9
17. Considering other schools in which you have taught or which you have visited, how much do you like the general exterior appearance of this school?			
1. Like	36.4	29.7	47.9
2. Neutral	28.0	30.6	23.4
3. Dislike	35.6	39.6	28.6
18. Considering other schools in which you have taught or which you have visited, how much do you like the general interior appearance of this school?			
1. I like it a lot	59.2	63.5	51.8
2. I like it a little	24.9	22.3	29.5
3. Neutral/Dislike	15.8	14.2	18.7
19. In your opinion, how adequate is the layout of this school?			
1. Superior	18.2	15.9	22.1
2. Adequate	57.0	58.0	55.3
3. Inferior	24.9	26.1	22.6
20. In your opinion, how adequate are the acoustics in this school?			
1. Superior	13.2	16.0	8.4
2. Adequate	57.6	63.9	47.9
3. Inferior	29.3	20.9	43.7
21. In your opinion, how adequate is the lighting in this school?			
1. Superior	39.5	36.3	45.1
2. Adequate	48.8	48.2	49.7
3. Inferior	11.7	15.5	5.1
22. In your opinion, how adequate is the atmosphere (temperature, humidity, and ventilation) in this school?			
1. Superior	11.1	6.6	19.0
2. Adequate	36.2	33.7	40.5
3. Inferior	52.6	59.7	40.5
23. In your opinion, how adequate are the coat racks/lockers in this school?			
1. Superior	5.1	2.5	9.7
2. Adequate	48.1	39.9	62.7
3. Inferior	46.8	57.7	27.6

	% OVERALL	% K-6	% 7-9
24. How satisfied are you with the furniture, shelving, and storage units in this school?			
1. Satisfied	49.3	54.7	39.9
2. Neither satisfied nor dissatisfied	12.4	12.1	13.0
3. Dissatisfied	38.2	33.1	47.2
25. Do you feel teachers have enough privacy in this school?			
1. All/most of the time	47.8	44.3	54.1
2. Some of the time	37.4	38.9	34.9
3. Never	14.9	16.9	10.9
26. Do you feel students have enough privacy in this school?			
1. All/most of the time	37.9	34.3	44.0
2. Some of the time	48.7	51.0	44.6
3. Never	13.4	14.6	11.4
27. Please rate the location of your area.			
1. Superior	32.0	31.0	33.7
2. Adequate	52.2	54.3	48.6
3. Inferior	15.8	14.7	17.7
28. Please rate the roominess of your area.			
1. Superior	28.7	27.1	31.5
2. Adequate	49.9	49.5	50.5
3. Inferior	21.4	23.3	17.9
29. Please rate the acoustics in your area.			
1. Superior	15.7	15.9	15.4
2. Adequate	60.0	66.7	48.4
3. Inferior	24.3	17.5	36.3
30. Please rate the lighting in your area.			
1. Superior	35.9	30.9	44.3
2. Adequate	54.3	57.0	49.7
3. Inferior	9.8	12.1	5.9
31. Please rate the atmosphere (heating, temperature, ventilation) in your area.			
1. Superior	10.9	6.1	19.0
2. Adequate	39.6	39.0	40.8
3. Inferior	49.5	55.0	40.2

	% OVERALL	% K-6	% 7-9
32. Do you have access to a common area from your teaching area?			
1. Yes, adjoining my teaching area	46.2	49.8	40.1
2. Yes, close to my teaching area	28.2	27.3	29.7
3. Yes, far from my teaching area	6.5	3.9	11.0
4. No	19.1	19.0	19.2
33. Is an enclosed classroom available for your use?			
1. All/most of the time	30.1	26.9	35.5
2. Some of the time	26.6	24.3	30.6
3. Never	43.3	48.9	33.9
34. Is a seminar room available for your use?			
1. All the time	27.2	30.0	22.4
2. Most of the time	25.0	23.3	27.9
3. Some of the time	30.0	28.1	33.3
4. Never	17.7	18.5	16.4
35. On the average, how often do your students use seminar rooms?			
1. Never	19.3	21.6	15.5
2. Sometimes but less than once a week	32.1	30.5	34.8
3. 1-2 times a week	19.1	18.6	20.0
4. 3 or more times a week	29.5	29.4	29.7
36. How often do you use the teacher preparation room for your area?			
1. Never and less than once a week	31.2	41.4	14.8
2. 1-4 times a week	17.1	19.7	12.9
3. Once a day	13.6	9.2	20.6
4. More than once a day	38.1	29.7	51.6
37. On the average, how often do your students visit the school library/resource centre as a class?			
1. Never	14.4	9.2	24.5
2. Sometimes, but less than once a week	30.9	24.4	43.5
3. 1-2 times a week	41.9	54.4	17.7
4. 3-4 times a week	6.7	6.7	6.8
5. Once/more a day	6.0	5.3	7.5
38. On the average, how often do you visit the school library resource centre?			
1. Less than once a week	24.9	19.3	34.3
2. 1-2 times a week	32.2	37.3	23.6
3. 3-4 times a week	23.6	28.0	16.3
4. Once/more a day	19.2	15.3	25.8

	% OVERALL	% K-6	% 7-9
39. Is it too noisy for you in your teaching area?			
1. All/most of the time	19.3	17.3	22.8
2. Some of the time	66.5	69.6	61.1
3. Never	14.2	13.1	16.1
40. What kind of furniture (excluding chairs) is there in your area?			
1. SEF furniture (Cameron-McIndoo)	66.2	70.9	57.6
2. Standard and mixed	33.8	29.1	42.4
41. For your method of teaching, please rate both the quality and sufficiency of the storage units/cupboards in your teaching area.			
Quality			
1. Superior	12.9	11.7	15.2
2. Adequate	56.7	61.8	47.4
3. Inferior	30.4	26.5	37.4
Sufficiency			
1. Abundant	15.7	18.2	11.0
2. Sufficient	55.7	53.6	59.5
6. Insufficient	28.6	28.1	29.4
42. For your method of teaching, please rate both the quality and sufficiency of the tote boxes in your teaching area.			
Quality			
1. Superior	15.4	16.0	13.2
2. Adequate	65.1	65.6	63.2
3. Inferior	19.4	18.4	23.5
Sufficiency			
1. Abundant	19.4	20.6	14.3
2. Sufficient	63.2	63.1	63.5
3. Insufficient	17.5	16.3	22.2
43. For your method of teaching, please rate both the quality and sufficiency of the bookshelves/bookcases in your teaching area.			
Quality			
1. Superior	11.3	12.3	9.4
2. Adequate	65.5	70.5	56.3
3. Inferior	23.2	17.1	34.4

43. (Continued)

	% OVERALL	% K-6	% 7-9
Sufficiency			
1. Abundant	18.3	19.8	15.5
2. Sufficient	65.2	63.5	68.4
3. Insufficient	16.5	16.7	16.1

44. For your method of teaching, please rate both the quality and sufficiency of the chairs in your teaching area.

	% OVERALL	% K-6	% 7-9
Quality			
1. Superior	17.6	19.3	14.5
2. Adequate	68.1	67.2	69.7
3. Inferior	14.3	13.5	15.8
Sufficiency			
1. Abundant	24.9	27.7	19.6
2. Sufficient	65.5	66.7	63.3
3. Insufficient	9.5	5.6	17.1

45. For your method of teaching, please rate both the quality and sufficiency of the tables in your teaching area.

	% OVERALL	% K-6	% 7-9
Quality			
1. Superior	15.7	15.2	16.7
2. Adequate	58.8	59.5	57.4
3. Inferior	25.5	25.2	25.9
Sufficiency			
1. Abundant	19.3	21.6	14.7
2. Sufficient	66.4	67.5	64.1
3. Insufficient	14.3	10.8	21.2

46. For your method of teaching, please rate both the quality and sufficiency of the screens/dividers in your teaching area.

	% OVERALL	% K-6	% 7-9
Quality			
1. Superior	7.3	5.5	12.5
2. Adequate	49.8	47.0	58.3
3. Inferior	42.9	47.5	29.2
Sufficiency			
1. Abundant	13.0	14.4	8.8
2. Sufficient	58.5	56.0	66.2
3. Insufficient	28.5	29.7	25.0

	% OVERALL	% K-6	% 7-9
47. For your method of teaching, please rate both the quality and sufficiency of the display surfaces in your teaching area.			
Quality			
1. Superior	11.8	10.9	13.4
2. Adequate	58.0	51.9	68.9
3. Inferior	30.2	37.2	17.7
Sufficiency			
1. Abundant	12.9	15.4	8.3
2. Sufficient	41.4	37.2	49.0
3. Insufficient	45.7	47.4	42.7
48. For your method of teaching, please rate both the quality and sufficiency of the chalkboard in your teaching area.			
Quality			
1. Superior	16.6	16.4	16.9
2. Adequate	66.9	64.7	70.3
3. Inferior	16.6	19.0	12.8
Sufficiency			
1. Abundant	14.6	16.2	12.1
2. Sufficient	57.1	59.8	52.7
3. Insufficient	28.3	24.1	35.2
49. Since the school year began, how many times have you opened or closed a folding or sliding wall between rooms or areas in your teaching area?			
1. Never	55.6	56.8	52.2
2. Once	13.5	15.9	6.5
3. 2-5 times	10.1	12.1	4.3
4. 6 or more times this school year	20.8	15.2	37.0
50. Since the school year began, how many times have you rearranged tables in your teaching area?			
1. Never	5.6	3.9	9.2
2. Once	8.9	9.1	8.5
3. 2-3 times	32.5	32.1	33.3
4. 4 or more	52.9	54.9	49.0
51. Since the school year began, how many times have you rearranged storage containers in your teaching area?			
1. Never	24.1	19.7	33.6
2. 1-2 times	40.8	38.5	45.7
3. 3-5 times	22.0	25.9	13.6
4. 6 or more	13.1	15.9	7.1

	% OVERALL	% K-6	% 7-9
52. Since the school year began, how many times have you changed the position of the shelves in the bookcases, cupboards or storage bins in your teaching area?			
1. Never	40.1	36.7	46.5
2. 1-2 times this school year	35.7	37.7	32.1
3. 3-5 times this school year	14.6	14.0	15.7
4. 6 or more times this school year	9.6	11.7	5.7
53. Since the school year began, how many times have you changed the doors of the bookshelves, cupboards, or storage bins in your teaching area?			
1. Never	75.3	76.3	73.1
2. Once this school year	11.0	10.7	11.8
3. 2 or more times this school year	13.6	13.0	15.1
54. On the average, how often do you use a sink in your teaching area?			
1. Never	7.8	6.5	11.2
2. 2 or less times a week	22.1	22.8	20.4
3. 3-5 times a week	21.5	25.6	11.2
4. 6 or more times a week	48.5	45.1	57.1
55. On the average, how often do you use an electric/electronic service column in your teaching area?			
1. Never	11.2	9.3	15.3
2. Sometimes, but less than once a week	17.6	14.4	24.5
3. 1-5 times a week	34.2	36.3	29.6
4. 6 or more times a week	37.1	40.0	30.6
56. Do you like the windows in your area?			
0. No windows in my area	28.1	21.7	39.2
1. I like them	25.3	26.1	23.8
2. I neither like them nor dislike them	17.0	18.8	13.8
3. I dislike them	29.7	33.4	23.2
57. How important to you are windows in your area?			
1. Very important	49.9	52.9	44.5
2. Important	21.3	21.3	21.4
3. Neither important nor unimportant	17.8	16.8	19.7
4. Unimportant	11.0	9.0	14.5
58. On the average, how often do students view a film (either 16 or 8 mm) in your classroom/teaching area?			
1. Never	15.9	15.4	16.7
2. Sometimes, but less than once a month	23.6	17.9	33.3
3. 1-2 times a month	22.6	19.9	27.2
4. 3 or more	38.0	46.8	22.8

	% OVERALL	% K-6	% 7-9
59. On the average, how often do students view filmstrips and/or slides in your classroom/teaching area?			
1. Never	14.4	10.7	20.7
2. Sometimes, but less than once a month	21.7	15.9	31.5
3. 1-2 times a month	22.5	23.3	21.2
4. 3 or more times	41.4	50.2	26.6
60. On the average, how often do students use audio in your classroom/teaching area?			
1. Never	15.4	8.7	26.6
2. Sometimes, but less than once a month	19.8	13.5	30.4
3. 1-2 times a month	11.5	10.0	14.1
4. 3 or more times	53.3	67.7	28.8
61. On the average, how often do students view a TV program in your classroom/teaching area?			
1. Never	60.4	53.3	72.7
2. Sometimes, but less than once a month	22.5	21.9	23.5
3. 1-2 times a month	6.2	8.3	2.7
4. 3 or more times	10.8	16.5	1.0
62. How many students per teacher are there in your teaching area?			
1. 25 or less	23.3	26.4	18.2
2. 26-35 students	68.4	64.7	74.4
3. More than 35 students	8.3	8.9	7.4
63. Do older children work with younger children in your teaching area?			
1. All/most of the time	11.3	14.1	6.6
2. Some of the time	41.1	53.7	19.3
3. Never	47.6	32.3	74.0
64. On the average, how many hours per week do you spend by yourself planning and preparing your program?			
1. 2 or less hours a week	11.1	11.8	9.9
2. 2-3 hours	11.9	11.8	12.2
3. 3-5 hours	33.3	34.7	30.9
4. More than five hours	43.6	41.7	47.0
65. On the average, how many hours per week do you spend in joint planning with other teachers?			
1. None	11.1	11.4	10.5
2. Less than one hour	29.2	27.9	31.5
3. 1-2 hours	30.8	34.9	23.8
4. More than 2 hours a week	28.8	25.7	34.3

	% OVERALL	% K-6	% 7-9
66. What proportion of your time do you work with your team?			
1. Less than a quarter of my time	47.1	48.0	45.3
2. A quarter to three quarters of my time	32.2	34.2	28.2
3. All my time	20.8	17.8	26.5
67. How many people make up your team?			
1. 2 person team	28.4	31.7	21.8
2. 3 person team	20.1	24.8	10.9
3. 4 person team	20.1	17.8	24.4
4. 5 or more times	31.5	25.7	42.9
68. Do you have a designated team leader?			
1. Yes	42.7	21.4	81.3
2. No	57.3	78.6	18.7
69. Do you prefer teaching in a self-enclosed classroom or an open area?			
1. No preference	17.7	16.7	19.3
2. I prefer an enclosed teaching area	29.2	18.8	45.5
3. I prefer an open teaching area	25.0	33.3	11.9
4. Both, alternating during the day	28.1	31.2	23.3
70. Compared to other teachers you know, rate your own teaching style.			
1. Very progressive	9.3	7.8	12.0
2. Moderately progressive	61.5	63.2	58.5
3. Traditional	29.2	29.0	29.5
71. How easy is it for you to integrate new methods or materials into your regular pattern of teaching?			
1. Very easy	34.7	31.1	40.8
2. Easy	38.9	40.7	33.5
3. Neutral/difficult	27.2	28.1	25.7

IDEAL OPEN PLAN SCHOOL[1]

The following statements are often used to describe the ideal open plan school. Each of the statements will apply to your school to some degree. Indicate how well each statement describes your school by circling a number. Lower numbers indicate that the statement suits your school, high numbers that it is not very appropriate.

Select only one number for each item.

1. Students are developing better attitudes and a sense of responsibility.

Good descriptor of this school 1 2 3 4 5 6 7 Poor descriptor of this school

2. Staff members respect and trust one another.

Good descriptor of this school 1 2 3 4 5 6 7 Poor descriptor of this school

3. The principal is committed to the open plan concept.

Good descriptor of this school 1 2 3 4 5 6 7 Poor descriptor of this school

4. Students are learning the basic skills.

Good descriptor of this school 1 2 3 4 5 6 7 Poor descriptor of this school

5. Students are developing curiosity and creativity.

Good descriptor of this school 1 2 3 4 5 6 7 Poor descriptor of this school

6. The principal is helpful and supportive.

Good descriptor of this school 1 2 3 4 5 6 7 Poor descriptor of this school

7. Teachers have a great deal of influence on program.

Good descriptor of this school 1 2 3 4 5 6 7 Poor descriptor of this school

8. There is a well integrated program.

Good descriptor of this school 1 2 3 4 5 6 7 Poor descriptor of this school

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[1] The frequency for each position in the Scale for each descriptor is presented on pages 221 - 222.

9. There is good communication with parents.

Good descriptor of this school 1 2 3 4 5 6 7 Poor descriptor of this school

10. There is a good overall tone.

Good descriptor of this school 1 2 3 4 5 6 7 Poor descriptor of this school

11. The building has plenty of floor space.

Good descriptor of this school 1 2 3 4 5 6 7 Poor descriptor of this school

12. The building has a convenient layout.

Good descriptor of this school 1 2 3 4 5 6 7 Poor descriptor of this school

13. The building has efficient noise control.

Good descriptor of this school 1 2 3 4 5 6 7 Poor descriptor of this school

14. There are a sufficient number of enclosed spaces to complement the open plan.

Good descriptor of this school 1 2 3 4 5 6 7 Poor descriptor of this school

If important statements are missing from the list, please enter them below and rate them too.

15. Other ____

Good descriptor of this school 1 2 3 4 5 6 7 Poor descriptor of this school

16. Other ____

Good descriptor of this school 1 2 3 4 5 6 7 Poor descriptor of this school

Ideal Open Plan School

		1.		2.		3.		4.		5.		6.		7.	
		Better Student Attitudes		Staff Respect		Principal Committed		Basic Skills		Curiosity Creativity		Principal Helpful		Teacher Influence	
		%	N	%	N	%	N	%	N	%	N	%	N	%	N
1. Good Descriptor	K-6	6.3	21	18.8	62	41.8	138	25.1	83	15.1	50	37.5	123	33.8	112
	7-9	5.7	11	16.5	32	45.7	86	18.2	35	10.9	21	51.8	99	37.5	72
	Total	6.1	32	18.0	94	43.2	224	22.6	18	13.5	71	42.8	222	35.2	184
2.	K-6	14.8	49	27.4	66	18.8	62	22.1	73	29.0	96	19.8	65	32.9	109
	7-9	20.3	39	36.5	38	20.7	39	24.5	47	28.5	55	23.0	44	31.8	61
	Total	16.8	88	19.9	104	19.5	101	22.9	120	28.8	151	21.0	109	32.5	170
3.	K-6	22.4	74	20.1	66	14.5	48	20.2	67	26.9	89	14.6	48	16.9	56
	7-9	22.9	44	19.6	38	12.8	24	21.9	42	25.9	50	10.5	20	10.4	20
	Total	24.5	118	19.9	104	13.9	72	20.8	109	26.5	139	13.1	68	14.5	76
4.	K-6	24.2	80	14.6	48	12.1	40	17.8	59	20.5	68	16.2	53	9.7	32
	7-9	25.0	48	20.1	39	8.0	15	15.1	29	24.4	47	7.9	15	7.8	15
	Total	24.5	128	16.6	87	10.6	55	16.8	88	21.9	115	13.1	68	9.0	47
5.	K-6	20.2	67	7.6	25	2.1	7	7.9	26	5.4	18	3.7	12	3.0	10
	7-9	10.9	21	8.2	16	4.3	8	9.9	19	6.7	13	2.6	5	5.2	10
	Total	16.8	88	7.8	41	2.9	15	8.6	45	5.9	31	3.3	17	3.8	20
6.	K-6	5.4	18	8.2	27	6.7	22	5.4	18	1.8	6	3.0	10	1.5	5
	7-9	9.4	18	4.6	9	4.3	8	7.3	14	2.1	4	2.6	5	5.2	10
	Total	6.9	36	6.9	36	5.8	30	6.1	32	1.9	10	2.9	15	2.9	15
7. Poor Descriptor	K-6	6.6	22	3.3	11	3.9	13	1.5	5	1.2	4	5.2	17	2.1	7
	7-9	5.7	11	4.1	8	4.3	8	3.1	6	1.6	3	1.6	3	2.1	4
	Total	6.3	33	3.6	19	4.1	21	2.1	11	1.3	7	3.9	20	2.1	11

Ideal Open Plan School

		8. Integrated Program %	8. Integrated Program N	9. Communication With Parents %	9. Communication With Parents N	10. Good Overall Tone %	10. Good Overall Tone N	11. Plenty of Floor Space %	11. Plenty of Floor Space N	12. Convenient Layout %	12. Convenient Layout N	13. Noise Control %	13. Noise Control N	14. Complementary Enclosed Spaces %	14. Complementary Enclosed Spaces N
1. Good Descriptor	K-6	10.3	34	21.0	69	18.8	62	34.1	114	15.0	50	6.9	23	7.8	26
	7-9	11.5	22	33.0	65	15.5	30	27.3	53	17.6	34	2.1	4	9.9	19
	Total	10.7	56	25.6	134	17.6	92	31.6	167	15.9	84	5.1	27	8.6	45
2.	K-6	21.2	70	26.5	87	24.3	80	22.8	76	20.4	68	18.7	62	10.2	34
	7-9	17.3	33	31.3	61	38.7	75	30.4	59	23.3	45	11.9	23	12.5	24
	Total	19.8	103	28.3	148	29.6	155	25.6	135	21.4	113	16.2	85	11.1	58
3.	K-6	29.7	98	22.9	75	21.6	71	12.3	41	16.2	54	16.9	56	11.7	39
	7-9	26.2	50	18.5	36	23.2	45	16.5	32	19.7	38	20.6	40	12.0	23
	Total	28.4	148	21.2	111	22.2	116	13.8	73	17.5	92	18.3	96	11.8	62
4.	K-6	22.1	73	18.6	61	18.2	60	11.1	37	17.4	58	20.8	69	15.7	52
	7-9	21.5	41	9.2	18	11.9	23	10.3	20	17.1	33	15.5	30	15.6	30
	Total	21.9	114	15.1	79	15.9	83	10.8	57	17.3	91	18.8	99	15.6	82
5.	K-6	7.9	26	5.5	18	9.7	32	6.6	22	9.6	32	13.6	45	14.5	48
	7-9	9.9	19	4.1	8	6.7	13	7.2	14	7.8	15	19.6	27	19.3	37
	Total	8.6	45	5.0	26	8.6	45	6.8	36	8.9	47	16.0	72	16.2	85
6.	K-6	5.2	17	5.5	13	5.5	18	7.8	26	10.8	36	13.9	46	18.7	62
	7-9	7.3	14	4.1	4	2.6	5	5.2	10	8.8	17	19.6	38	13.0	25
	Total	6.0	31	5.0	17	4.4	23	6.8	36	10.1	53	16.0	84	16.6	87
7. Poor Descriptor	K-6	3.6	12	1.5	5	1.8	6	5.4	18	10.8	36	9.3	31	21.4	71
	7-9	6.3	12	1.5	3	1.5	3	3.1	6	5.7	11	16.5	32	17.7	34
	Total	4.6	24	1.5	8	1.7	9	4.5	24	8.9	47	12.0	63	20.0	105

ENVIRONMENTAL ASSESSMENT[1]

This questionnaire is designed to measure your general reaction to the whole school building and several places in it.

Please rate each PLACE on each SCALE by entering an assessment number (1 to 7) in the appropriate box. Thus if you felt that your teaching area was neither adequate nor inadequate, you would enter -4- in the first box. Do not ponder long over any one question. Treat each response separately, any apparent repetition is for statistical control.

	THE AREA IN WHICH YOU TEACH MOST OF THE TIME	THE SCHOOL BUILDING AS A WHOLE	LIBRARY RESOURCE CENTRE
ADEQUATE 1 2 3 4 5 6 7 INADEQUATE			
SUITABLE 1 2 3 4 5 6 7 UNSUITABLE			
ACCEPTABLE 1 2 3 4 5 6 7 UNACCEPTABLE			
PLEASANT 1 2 3 4 5 6 7 UNPLEASANT			
COMFORTABLE 1 2 3 4 5 6 7 UNCOMFORTABLE			
GOOD 1 2 3 4 5 6 7 BAD			
INTERESTING 1 2 3 4 5 6 7 UNINTERESTING			
STIMULATING 1 2 3 4 5 6 7 DEPRESSING			
BEST POSSIBLE 1 2 3 4 5 6 7 WORST POSSIBLE			
ABOVE AVERAGE 1 2 3 4 5 6 7 BELOW AVERAGE			

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1. In the text the scale resulting from this set of bipolar adjectives is referred to as "Canter Environmental Assessment Scale." The frequency for each place in the scale is presented on pages 224 - 225.

ENVIRONMENTAL ASSESSMENT

	AREA				BUILDING				LRC			
	% K-6	% 7-9	% Total	N	% K-6	% 7-9	% Total	N	% K-6	% 7-9	% Total	N
1. Adequate	27.4	21.6	25.3	130	15.0	10.1	13.2	69	42.1	23.4	35.3	183
2.	25.5	34.1	28.6	147	25.5	31.2	27.6	144	25.8	38.8	30.5	158
3.	19.5	13.5	17.3	89	23.7	28.6	25.5	133	14.5	14.9	14.7	76
4.	16.1	12.4	14.6	76	19.2	19.0	19.2	100	9.1	9.0	9.1	47
5.	4.9	8.1	6.0	31	9.9	4.2	7.9	41	3.0	5.3	3.9	20
6.	4.0	7.6	5.3	27	4.2	6.3	5.0	26	2.4	5.9	3.7	19
7. Inadequate	2.7	2.7	2.7	14	2.4	0.5	1.7	9	3.0	2.7	2.9	15
1. Suitable	24.9	23.5	24.4	125	14.5	15.5	14.9	77	41.3	25.3	35.5	182
2.	30.7	35.0	32.2	165	29.7	28.9	29.4	152	28.1	37.6	31.6	162
3.	19.5	13.7	17.4	89	18.5	24.1	20.5	106	16.5	19.4	17.5	90
4.	14.0	13.1	13.7	70	25.5	21.4	24.0	124	7.3	10.2	8.4	43
5.	4.3	7.7	5.5	28	5.8	5.9	5.8	30	0.6	2.2	1.2	6
6.	2.7	4.9	3.5	18	4.2	4.3	4.3	22	2.8	3.8	3.1	16
7. Unsuitable	4.0	2.2	3.3	17	1.8	0.0	1.2	6	3.4	1.6	2.7	14
1. Acceptable	34.8	29.7	32.9	167	23.5	19.3	22.0	113	40.1	30.1	36.5	186
2.	24.6	29.1	26.2	133	26.9	34.2	29.6	152	28.4	36.0	31.2	159
3.	19.7	13.7	17.6	89	20.2	21.4	20.6	106	17.0	18.3	17.5	89
4.	13.2	16.5	14.4	73	20.8	19.3	20.2	104	10.5	10.2	10.4	53
5.	3.7	6.0	4.5	23	4.6	3.2	4.1	21	0.9	0.5	0.8	4
6.	2.5	3.3	2.8	14	2.8	2.1	2.5	13	0.9	2.7	1.6	8
7. Unacceptable	1.5	1.6	1.6	8	1.2	0.5	1.0	5	2.2	2.2	2.2	11
1. Pleasant	38.1	26.8	34.1	174	30.1	25.1	28.3	146	45.4	30.1	39.8	204
2.	30.5	31.7	30.9	158	28.3	34.8	30.6	158	28.5	43.5	34.0	174
3.	15.9	21.9	18.0	92	19.5	16.0	18.2	94	14.4	14.0	14.3	73
4.	9.8	8.7	9.4	48	12.8	15.5	13.8	71	6.7	5.9	6.4	33
5.	3.0	4.9	3.7	19	7.0	5.3	6.4	33	2.1	3.8	2.7	14
6.	1.8	5.5	3.1	16	2.1	3.2	2.5	13	1.5	2.7	2.0	10
7. Unpleasant	0.9	0.5	0.8	4	0.3	0.0	0.2	1	1.2	0.0	0.8	4

	AREA				BUILDING				LRC			
	% K-6	% 7-9	% Total	N	% K-6	% 7-9	% Total	N	% K-6	% 7-9	% Total	N
1. Comfortable	29.8	18.7	25.8	131	26.3	17.1	23.0	118	44.8	30.6	39.6	202
2.	28.6	27.5	28.2	143	21.7	32.1	25.5	131	25.0	40.3	30.6	156
3.	14.8	22.5	17.6	89	19.6	21.4	20.2	104	13.9	14.5	14.1	72
4.	12.3	14.3	13.0	66	16.8	17.6	17.1	88	7.7	7.5	7.6	39
5.	7.1	7.7	7.3	37	7.3	4.8	6.4	33	3.7	2.2	3.1	16
6.	4.0	5.5	4.5	23	5.8	4.8	5.4	28	2.5	4.3	3.1	16
7. Uncomfortable	3.4	3.8	3.6	18	2.4	2.1	2.3	12	2.5	0.5	1.8	9
1. Good	28.2	21.9	26.0	129	20.7	15.8	18.9	96	36.9	29.7	34.3	172
2.	31.7	33.7	32.4	161	26.3	32.6	28.6	145	32.5	35.7	33.7	169
3.	17.9	14.6	16.7	83	23.8	17.9	21.7	110	14.1	13.2	13.7	69
4.	15.0	15.7	15.3	76	19.8	27.2	22.5	114	10.9	14.3	12.2	61
5.	3.4	9.0	5.4	27	5.9	3.3	4.9	25	1.9	2.7	2.2	11
6.	2.8	3.9	3.2	16	2.5	3.3	2.8	14	1.6	3.8	2.4	12
7. Bad	0.9	1.1	1.0	5	0.6	0.0	0.6	3	2.2	0.5	1.6	8
1. Interesting	28.5	18.7	25.0	126	24.8	19.3	22.7	116	38.5	25.1	33.6	171
2.	30.7	28.6	29.9	151	27.6	36.9	31.0	158	26.4	32.6	28.7	146
3.	21.4	18.7	20.4	103	23.2	20.9	22.4	114	17.7	20.9	18.9	96
4.	10.8	18.7	13.7	69	14.2	13.9	14.1	72	10.2	15.0	12.0	61
5.	5.3	7.7	6.1	31	8.7	5.3	7.5	38	2.8	1.6	2.4	12
6.	2.8	4.4	3.4	17	0.6	2.7	1.4	7	0.9	3.7	2.0	10
7. Uninteresting	0.6	3.3	1.6	8	0.9	1.1	1.0	5	3.4	1.1	2.6	13
1. Stimulating	23.5	15.3	20.5	104	18.5	15.0	17.2	88	34.0	22.0	29.6	151
2.	34.0	24.0	30.4	154	26.5	29.4	27.5	141	30.2	33.9	31.6	161
3.	18.5	20.8	19.3	98	22.2	26.7	23.8	122	14.2	18.8	15.9	81
4.	16.0	25.1	19.3	98	22.8	17.1	20.7	106	12.3	17.2	14.1	72
5.	3.7	6.6	4.7	24	5.2	6.4	5.7	29	4.0	2.2	3.3	17
6.	2.5	3.3	2.8	14	3.4	4.3	3.7	19	1.9	4.8	2.9	15
7. Depressing	1.9	4.9	3.0	15	1.5	1.1	1.4	7	3.4	1.1	2.5	13

	AREA				BUILDING				LRC			
	% K-6	% 7-9	% Total	N	% K-6	% 7-9	% Total	N	% K-6	% 7-9	% Total	N
1. Best possible	6.2	8.9	7.1	36	5.3	3.8	4.7	24	15.7	7.7	12.8	65
2.	27.7	27.9	27.8	140	20.4	23.9	21.7	110	34.3	35.7	34.8	176
3.	25.5	15.6	22.0	111	28.2	24.5	26.8	136	20.4	23.6	21.5	109
4.	30.5	28.5	29.8	150	30.7	34.2	32.0	162	21.6	22.5	21.9	111
5.	6.5	11.7	8.3	42	9.0	10.3	9.5	48	4.6	6.0	5.1	26
6.	2.8	6.1	4.0	20	4.6	3.3	4.1	21	2.8	4.4	3.4	17
7. Worst Possible	0.9	1.1	1.0	5	1.9	0.0	1.2	6	0.4	0.0	0.4	2

1. Above average	14.4	20.6	16.6	83	12.8	12.9	12.8	65	26.9	15.8	22.8	115
2.	30.6	26.7	29.2	146	31.3	34.4	32.4	164	31.9	40.8	35.1	177
3.	22.2	17.8	20.6	103	23.4	23.7	23.5	119	14.4	21.7	17.1	86
4.	24.7	16.1	21.6	108	23.1	18.8	21.5	109	20.9	12.5	17.9	90
5.	4.4	11.1	6.8	34	5.3	8.1	6.3	32	2.5	4.3	3.2	16
6.	2.5	6.1	3.8	19	2.8	1.6	2.4	12	1.9	4.3	2.8	14
7. Below Average	1.3	1.7	1.4	7	1.3	0.5	1.0	5	1.0	0.2	1.2	6

DIMENSIONS OF SCHOOLING QUESTIONNAIRE (DISC)

The purpose of this part of the questionnaire is to obtain a description of your class on a variety of dimensions. PLEASE RESPOND TO THE ITEMS IN TERMS OF WHAT ACTUALLY HAPPENS IN YOUR SCHOOL SITUATION. DO NOT RESPOND IN TERMS OF WHAT YOU THINK SHOULD HAPPEN.

Each question contains several categories describing situations relating to one dimension of schooling. Please read all the categories before responding to that question. For each question, rank the categories in terms of how often they occur in your class. Assign the highest rank (1) to the category which occurs most often or to the most students. Assign the second highest rank (2) to the category which happens the next most often . . . and so on down to the lowest ranked category.

Do not rank categories which do not apply to your situation or where a ranking system is inappropriate. Rank as many or as few of the categories as you feel are appropriate for describing your class situation.

Items 1-6 refer to the general school situation; Items 7-30 refer to a specific subject. If you teach social studies, respond to items 7-30 for it. If you do not teach social studies, respond for your major subject--the one you teach most of the time. If you teach two subjects equal amounts of time, neither of which is social studies; respond for the one you will teach next teaching period. If you will not be responding for social studies, record here the subject for which you will be responding. Subject: ______________________________

("Class" in this questionnaire is the group of students to whom you teach social studies or the subject for which you will be responding.)

Example Item

LIBRARY USAGE.

A.	Students go to the school library individually whenever they wish.	3
B.	Students go to the school library individually with the permission of their teachers.	2
C.	Students go to the school library in groups with the supervision of a teacher or librarian.	1
D.	Students go to the school library mainly outside regular school hours.	____

The response in the example describes a situation in which the most frequently occurring category is "C"; the second most frequently occurring category is "B"; the third most frequently occurring category is "A"; and "D" simply does not occur.

Remember, you may rank as few or as many of the categories as are appropriate for your situation.

1. ASSIGNMENT OF STUDENTS TO TEACHERS. This section is concerned with who makes the decisions about student assignment to teachers.

   A. Class assignments are decided upon by students. ________

   B. Class assignments are decided upon by parents ________

   C. Class assignments are decided upon by teachers ________

   D. Class assignments are decided upon by principal or vice-principal. ________

2. TIME SCHEDULING. This section is concerned with the amount of time which is blocked into scheduled activities.

   A. Fully Unscheduled: Activities (e.g. math or other subjects, outdoor play, work with art materials, etc.) are not scheduled but occur as students' and/or teachers' interests dictate. ________

   B. Mostly Unscheduled: Activities are not scheduled for most of the day, but there are some activities (no more than 1/4 of the day) that are held at specific times (e.g. a French lesson given by a teacher who comes from outside the school or reading, etc.). ________

   C. Scheduled and Unscheduled: Approximately 1/2 the day is unscheduled with the other 1/2 blocked into scheduled activities. ________

   D. Mostly scheduled: Activities are scheduled for most of the day (about 3/4) but the rest of the time is left unscheduled so that activities occur as students' and teachers' interests dictate. ________

   E. Fully scheduled: The full day is organized into activities that occur according to some pre-arranged timetable. ________

3. FREE TIME. This section is concerned with the amount of time during which students are free to pursue their own interests. This is not the same as independent study time where students work on projects or assignments in a particular subject area.

   A. The entire day is available for students to pursue their own interests (free time). ______

   B. At least half the day is available as free time ______

   C. One - two hours of free time are available each day. ______

   D. Less than one hour of free time is available each day. ______

   E. There is no free time available. ______

4. RULE-MAKING. This section is concerned with determining who makes the rules which govern school behaviour.

   A. Rules for student conduct are made by the administrative staff (principal, vice-principal). ______

   B. Rules for student conduct are made by the teachers. ______

   C. Rules for student conduct are made by the parents. ______

   D. Rules for student conduct are made by the students. ______

5. RULE-ENFORCING. This section is concerned with determining who enforces the rules governing general school behaviour.

A. Rules for student conduct are enforced by the administrative staff (principal, vice-principal). ______

B. Rules for student conduct are enforced by the teachers. ______

C. Rules for student conduct are enforced by the parents. ______

D. Rules for student conduct are enforced by the students. ______

6. DEFINING GENERAL OBJECTIVES. This section is concerned with who specifies the general objectives (aims, goals, philosophy, expected outcomes) of schooling.

A. The objectives are defined by the administrative staff (i.e. the school board, central administration, principal). ______

B. Objectives are defined by teachers. ______

C. Objectives are defined by parents. ______

D. Objectives are defined by students. ______

E. Objectives are not defined. ______

7. **STUDENTS' MOBILITY**. This section is concerned with the amount of freedom which students have to move around the school on a regular basis.

☐ Social Studies

☐ ____________

A. Students do not need the permission of the teacher to leave the classroom, but freely move in and out of the room (or area) to use the library, resource centre, etc. ________

B. Students must ask the teacher's permission to move in and out of the classroom to use the library, resource centre, etc. but permission is usually given readily. ________

C. Students move in and out of the classroom to use the library, resource centre, etc. only in special circumstances (i.e. with special permission) or as class groups. ________

8. **DEVELOPMENT OF MATERIALS**. This section is concerned with the amount of personal involvement that students and teachers have in the development of materials for the classroom.

☐ Social Studies

☐ ____________

A. There is little involvement of teachers and/or students in developing materials; i.e. most materials in use are ready-to-use "packages" (e.g. reading series, sets of math texts, computer-assisted instruction, etc.). ________

B. There is some involvement of teachers and/or students in developing materials; i.e. most materials in use are things chosen by teachers, students, or others from a wide variety of sources in a ready-to-use form (e.g. books not in series, an abacus, a film, etc.). ________

C. There is a great deal of involvement of teachers and/or students in developing materials; i.e. most materials in use have been developed, created or adapted by students, teachers and others specifically for situations which arose in this classroom (e.g. collections of objects for use in working out math problems, books, tape recordings or films made by students or teachers, equipment built by parents, etc. ________

9. SELECTION OF MATERIALS. This section is concerned with the involvement students have in selecting materials with which to work.

☐ Social Studies

☐ ______________

A. Students choose for themselves from all the materials available and may bring in materials from outside the classroom. ________

B. Students choose from alternatives suggested by the teacher. ________

C. Students are assigned materials prescribed for them individually. ________

D. Student is assigned materials prescribed to members of his subgroup of the class. (Same materials for all students in the same subgroup; different materials for each subgroup). ________

E. Student is assigned materials prescribed to all members of his class. (Same materials for all students in the same class.) ________

10. FLEXIBILITY OF ENVIRONMENT. This section is concerned with who makes the decisions about the arrangement and setting up of the learning area.

☐ Social Studies

☐ ______________

A. The arrangement of furniture and equipment in the learning area is decided upon by the administrative staff and doesn't change frequently. ________

B. The arrangement of furniture and equipment in the learning area is decided upon and changed by the teachers. ________

C. The arrangement of furniture and equipment in the learning area is decided upon and changed by the students. ________

11. LEARNING ENVIRONMENT. This section concerns the size of the area used by students during the school day.

☐ Social Studies

☐ ______________

A. Study and other activities take place at the student's own desk or table. ________

B. Study and other activities take place in a number of different places (centres) within the classroom area. ________

C. Study and other activities take place in a number of different places (centres) within the school. ________

D. Study and other activities take place on a fairly regular basis outside the school; the community and its institutions are incorporated into the learning environment. (e.g. a class is held in a museum or students and a teacher aide spend time walking around a shopping area and visiting a butcher a baker, a shoemaker's shop. This does not refer to occasional outings or class trips). ________

12. OTHER ADULT INVOLVEMENT. This section is concerned with the involvement of adults other than teachers in the classroom.

☐ Social Studies

☐ ______________

A. All teaching is done by the regular classroom teacher and special subject teachers. ________

B. Although most of the teaching is done by the classroom and special teachers, occasionally there are visitors, parents or volunteers who have special knowledge of a topic, or who help in a practical way in the classroom (e.g. a student's mother who is a doctor may talk to a class about what doctors do, or a parent may help decorate the classroom for a party). ________

C. Although much of the teaching is done by the classroom and special teachers, there are regularly involved parents, volunteers and frequent visitors who are welcome in the classroom and whose involvement is considered an important part of the learning experience. (e.g. a parent spends an afternoon a week at the school working with the students in art or a university student comes regularly to tutor students in math). ________

13. PEER GROUP ASSISTANCE. This section is concerned with the extent to which students work with other students on schoolwork.

☐ Social Studies

☐ ____________

A. Students independently seek assistance in their schoolwork from peers or other students; this is a frequent occurrence in the class and is accepted and encouraged as a valid way of seeking solutions or exploration. ________

B. There is occasional student-to-student assistance on a somewhat formal teacher-initiated basis (e.g. the teacher assigns a good reader to help a poorer reader or arranges for a tutor). ________

C. Assistance almost always comes from the teacher. ________

14. MEDIA USAGE. This section concerns the use of media as teaching aids in instruction.

☐ Social Studies

☐ ____________

A. Teachers and books are the primary media of instruction. ________

B. Teachers and books are augmented by media which is used by the teacher (e.g. the teacher shows a film or plays a record for the class). ________

C. Teachers and books are augmented by media which students have ready access to and use themselves (e.g. tape recorders or videotape equipment or records). ________

15. TEACHER FOCUS. This section concerns the size of the student group addressed by the teacher at one time.

☐ Social Studies

☐ ____________

A. The teacher directs attention to the class as a whole. ________

B. The teacher directs attention to sub-groups of the class. ________

C. The teacher directs attention to individual students. ________

16. TEACHER ROLE. This section is concerned with the role the teacher plays in the student's contact with what is being learned.

☐ Social Studies

☐ ____________

A. The teacher acts as a resource person to whom students come when seeking information and ideas. ________

B. The teacher acts as a discussion leader on topics initiated by the students. ________

C. The teacher acts as a discussion leader on topics of his/her choice. ________

D. The teacher acts as a presenter of planned lessons. ________

17. CO-OPERATIVE TEACHING. This section is concerned with the extent to which teachers plan and teach together.

☐ Social Studies

☐ ____________

A. Teachers plan and teach independently of each other. ________

B. Teachers discuss and plan work together but teach independently. ________

C. Teachers discuss, plan, and work on special projects together but generally maintain independence in regular teaching. ________

D. Teachers discuss, plan and work co-operatively so that they function as a co-ordinated unit. ________

18. STUDENT INVOLVEMENT IN FORMULATING APPROACHES TO LEARNING. This section is concerned with the extent to which teachers help students arrive at approaches to learning and problem solving.

☐ Social Studies

☐ ____________

A. Students formulate their own methods of learning and solving problems (e.g. a student studying the Arctic independently consults several people, looks in the card catalogue at the library, and writes to the government for information). ________

B. Students choose from alternative methods suggested by the teacher for learning and solving problems (e.g. a student studying the Arctic asks the teacher for help. The teacher suggests two books, a film strip and writing to the government). ________

C. Students are assigned methods by the teacher for learning and solving problems e.g. a student studying the Arctic is assigned the tasks of writing a letter to the government, reading two books, and viewing a filmstrip. ________

19. STUDENT PACING. This section is concerned with the pace at which the student works.

☐ Social Studies

☐ ______________

A. The student is expected to work at a pace set for all members of the class. ________

B. The student is expected to work at a pace set for the members of his subgroup of the class. ________

C. The student works at a pace prescribed for him individually. ________

D. The student sets his own pace. ________

20. ATTENDANCE. This section is concerned with students' physical presence at class activities.

☐ Social Studies

☐ ______________

A. Attendance at all activities of the class is not required (e.g. a math lesson is scheduled; a student is involved in another project and chooses not to attend the class). ________

B. Attendance at more than half the activities of the class is not required (e.g. it is required that a student attend a reading lesson, but he may choose not to be present for a social studies lesson). ________

C. Attendance at less than half the activities of the class is not required. ________

D. Attendance at all the activities of the class is required. ________

21. INDEPENDENT STUDY TIME. This section concerns the amount of time available for independent study; students work by themselves on projects of their choice but in keeping with the wide range objectives of the subject area (e.g. during a geography unit on the Middle East, a student might use his independent study time to create a paper maché relief map of the Sinai Penninsula).

☐ Social Studies

☐ ____________

A. Independent study time is available as the need arises. ______

B. There are 1-3 hours of independent study time available weekly. ______

C. There are 1/2-1 hours of independent study time available weekly. ______

D. There is no independent study time available. ______

22. SUBGROUPING CRITERIA. This section is concerned with how subgroups within the class are developed.

☐ Social Studies

☐ ____________

A. Students group themselves according to their own criteria (e.g. interests, friendships, etc.). ______

B. Students are grouped by the teacher on the basis of information about students' interests, aptitude, achievement, or social maturity. ______

C. Students are grouped by the teacher on the basis of random assignment (e.g. alphabetically, by sex or by size). ______

23. SUBGROUPING STABILITY. This item is concerned with the establishment and change in the composition of subgroups within the class.

☐ Social Studies

☐ ____________

A. Subgroups within the class are established for the duration of a specified period of time (e.g. for the school year or for a term). ________

B. Subgroups within the class are established and/or reorganized when the teacher feels it is necessary and/or desirable (e.g. for a new activity or when students' interests change). ________

C. Subgroups within the class are established and/or reorganized when students feel it is necessary and/or desirable (e.g. for a new activity or when students' interests change). ________

24. AGE RANGE. This section is concerned with the range of age of students in one class.

☐ Social Studies

☐ ____________

A. Students in the class are about the same age (except those who, at one time, have been either promoted or who have skipped a grade); age is the primary criterion for assigning a student to a class. ________

B. Students in the class are in a two or three year age range; there is a semi-graded system which will allow, to some extent, that individual differences in physical, social and intellectual maturity will be considered in assigning students to a class or grade. ________

C. Students in the class vary in age by more than three years; there is a multiage system which allows students with a wide variety of qualifications and ages to be in the same class. ________

25. DEFINING INSTRUCTIONAL OBJECTIVES. This section is concerned with who specifies the objectives of schooling.

☐ Social Studies

☐ ____________

A. The objectives are defined by the administrative staff (school board, central administration, principal). ________

B. Objectives are defined by teachers. ________

C. Objectives are defined by parents. ________

D. Objectives are defined by students. ________

E. Objectives are not defined. ________

26. PROMOTION TIMING. This section is concerned with when moves from grade to grade or from class to class occur (based on achievements or maturity).

☐ Social Studies

☐ ____________

A. Promotion decisions are made at the end of the school year or term. ________

B. Promotion decisions are made at the end of each unit of study. ________

C. Promotion decisions are made whenever it seems appropriate for the individual student. ________

D. Promotion does not occur. Rather, students remain in a class unit or intact group for several years. ________

27. EVALUATION FOCUS. This section is concerned with the size of the group being evaluated.

☐ Social Studies

☐ ______________

A. Evaluation procedures are the same for all students in the school. ________

B. Evaluation procedures are the same for all students in the class, but differ from class to class in the school. ________

C. Evaluation procedures are the same for each student within a subgroup of the class but differ from subgroup to subgroup. ________

D. Evaluation procedures are different for each student in the class. ________

28. TIMING OF EVALUATION. This section is concerned with the time(s) at which evaluation takes place.

☐ Social Studies

☐ ______________

A. Evaluation takes place at a few specified intervals (e.g. the end of each term). ________

B. Evaluation takes place at more frequent intervals (e.g. monthly or weekly). ________

C. Evaluation takes place all the time (e.g. daily). ________

29. STUDENT ROLE IN EVALUATION. This section is concerned with the degree to which students plan how their evaluation is to take place, i.e. developing procedures, collecting and analyzing data, making judgments, deciding when evaluation takes place, etc.

☐ Social Studies

☐ ____________

A. Students have the responsibility for planning and implementing evaluation procedures. ________

B. Teachers have the responsibility for planning and implementing evaluation procedures. ________

C. The administration has responsibility for planning and implementing evaluation procedures. ________

30. EVALUATION PROCEDURES. This section concerns the types of tests and other evaluation instruments used in student evaluation.

☐ Social Studies

☐ ____________

A. No formal tests are used; evaluation is based on work samples and anecdotal reports. ________

B. Evaluation instruments used were developed in this classroom. ________

C. Evaluation instruments used were developed within the school (by other teachers or in previous years). ________

D. Standardized (commercial) instruments are used. ________

31. What is your major concern about working in an open plan school?

32. Imagine you are talking to a teacher who is going to teach in open space for the first time. What advice would you give?

APPENDIX IV

CODING OF TEACHER OPEN-ENDED QUESTIONS

Item	Code
MAJOR CONCERNS ABOUT WORKING IN OPEN PLAN SCHOOL	
STUDENTS	
Does Q31/p32 have a concern about student suitability for open plan? (include concerns regarding: i. age or level ii. high or low ability iii. socio-economic level iv. temperament or personality)	0. No response 1. No 2. Yes[1]
Does Q31/p32 have a concern about students work habits/study skills/sense of responsibility?	
Does Q31/p32 have a concern about students learning/academic achievement/basic skills?	
TEACHERS	
Does Q31/p32 have a concern about teachers' interpersonal relations and compatability? (Include choice of team mate, getting along with team, with principal, honesty with each other).	
Does Q31/p32 have a concern about teachers' personal style? (Include need for flexibility, sense of humour, patience, being on display, self consciousness. Exclude need to compromise).	
Does Q31/p32 have a concern about pressures of open space on teachers? (Include necessity of hard work).	
Does Q31/p32 have a concern about need to compromise/lack of spontaneity? (Include fear of disturbing others, by AV, by music, by jokes, by drama, and cannot act independently. Exclude specific noise references).	
Does Q31/p32 have a concern about training, experience and preparation of teachers?	

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[1] All remaining coding categories for teachers' concerns are identical.

Item

PROGRAM

Does Q31/p32 have a concern about evaluation of program, students, etc.?

Does Q31/p32 have a concern about planning or organization?

Does Q31/p32 have a concern about discipline? (Include concern about maintaining control of class).

Does Q31/p32 have a concern about pupil/teacher ratio or class size? (Include reference to need for teacher aides).

Does Q31/p32 have a concern about teaching methods? (e.g. 'too many traditional methods')

Does Q31/p32 have general concerns about program? (e.g. goals, curriculum, preparation for life, integration of program, articulation to next level, openness not being exploited?)

ENVIRONMENT

Does Q31/p32 have a concern about noise and distractions?

Does Q31/p32 have a concern about space or crowding?

Does Q31/p32 have a concern about privacy? (Include lack of enclosures, need for movable walls).

Does Q31/p32 have a concern about the atmosphere (e.g. stuffy, no fresh air, windows don't open)

Does Q31/p32 have a concern about clutter, mess, etc.?

Does Q31/p32 have a concern about furniture?

ADVICE TO TEACHERS GOING TO TEACH IN OPEN SPACE FOR THE FIRST TIME

GENERAL

Is there general advice offered in Q32/p32 about advisability of teaching in open space? (Highly recommend open space - positive; Enjoy it - positive; Don't unless..- qualified; You will like it if.. - qualified; Don't try it - negative; Build a wall - negative.)	0. No response 1. No 2. Yes, positive 3. Yes, qualified 4. Yes, negative

STUDENTS

Does Q32/p32 advise about student suitability/ adaptability? (Include importance of teachers' relationship with students).	0. No response 1. No relevant advice 2. Yes, general 3. Yes, specific[1]
Does Q32/p32 advise about students' work habits/ study skills/ responsibility?	
Does Q32/p32 advise about students' learning/ academic achievement/basic skills?	

TEACHERS

Does Q32 advise about teachers' interpersonal relations and compatibility ('give and take, don't criticize others, share ideas, be friendly' are general; 'speak out' is specific)

Does Q32/p32 advise about teachers' personal style? ('keep your sense of humour, be kind, be open-minded, be flexible, be patient, be yourself' are all general. 'Laugh, smile, keep voice down, [if unrelated to noise]' are all specific).

Does Q32/p32 advise about hard work or the pressures of open space ('work harder' is general; 'take a day off for your mental health' is specific).

Does Q32/p32 advise about need to compromise/ constraint on spontaneity?

Does Q32/p32 advise about training, experience and preparation of teachers? ('get instruction' - general; 'visit, read, find out about team members, principal's philosophy, ask for grade level you know' - specific).

[1] All remaining coding categories for teachers' concerns are identical.

1

Does Q32/p32 advise about evaluation of program, students, etc. ('must evaluate' is general; 'daily evaluation is necessary' is specific.)

Does Q32/p32 advise about planning or organization ('establish routines', be consistent', 'know where things are', 'plan ahead' are general; 'keep detailed daybooks', 'find out of school time for planning' are specific.)

Does Q32/p32 advise about discipline? ('be consistent about rules'; 'aim at good discipline'; 'be strict'; are general - "Let children help make rules, rules should involve quiet signals, agree on common standards" - are specific.)

Does Q32/p32 advise about class size or pupil/teacher ratio?

Does Q32/p32 advise about teaching methods? ('be prepared to make changes in methods, go slowly, individualize' are general. 'Use library, use enclosed areas for socratic teaching, teach in small groups' are specific.)

ENVIRONMENT

Does Q32/p32 advise about noise and distractions? ('Be prepared for noise, learn to accept noise, keep noise level down' are general. 'Create a quiet corner, tell people when too noisy, keep your voice low' are specific.)

Does Q32/p32 advise about space or crowding?

Does Q32/p32 advise about privacy or lack of enclosures? ('Try to work out a situation that involves privacy' is general. 'Make full use of halls, locker rooms, seminars' is specific.)

Does Q32/p32 advise about the atmosphere?

Does Q32/p32 advise about clutter? ('Be neat' is general. 'Teach children where everything goes' is specific.)

Does Q32/p32 advise about furniture?

APPENDIX V

BIBLIOGRAPHY OF RESEARCH ON OPEN PLAN SCHOOLS[1]

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APPENDIX VI

RESEARCH ON ACADEMIC ACHIEVEMENT IN OPEN PLAN SCHOOLS

Students may enjoy going to school, but are they achieving academically? Critics of open plan are sure children are not learning. Some parents are concerned. And even many of the open plan teachers themselves worry about this.

> "My major concern is that the children in my class are learning as much as they can in an open area."
>
> "That the brightest and the least bright student have an opportunity to work as well as they can. The open plan school is better for the average student."
>
> "Is a child really being provided with a better environment for learning? This seems to be a major reason for constructing open area schools. However, there seem to be so many difficulties arising all the time that you begin to wonder if the child is really benefitting."
>
> K-6 Teachers

There are no clear consistent trends on this question. Most studies have found no significant differences between achievement of students in open plan and students in traditional plan schools.

Several questions should be asked about the existing studies on academic achievement in open plan schools:

How long have the open plan schools been operating?
How many years of experience have the students had in traditional plan schools?
Has I.Q. been controlled for?
Has socio-economic level been controlled for?
What about inner city versus suburban and/or rural differences?
Are there sex differences?
Have program differences in both types of settings been considered?
Do teacher experience, qualifications, attitudes make any difference?
On what characteristics have the open plan schools and traditional plan schools been matched?
Are there other contributing factors such as over-crowding or understaffing?

Nearly all the studies on academic achievement[1] were conducted in the one school system. An exception is Wagner's Study (1974), which drew its sample of children from both the separate school system and the public school systems in Metropolitan Toronto, for a total of seven school boards.

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[1] Full citations for the studies are in the Bibliography of Research on Open Plan Schools, Appendix V, pp. 248 - 258.

In at least three separate studies all individual grade levels were covered and a majority of the studies included grade 5 (10 out of 22).

Number Of Studies At Various Grades

Grade	1	2	3	4	5	6	7	8
No. of Studies	3	4	7	6	10	6	3	6

Some studies encompassed a single grade level (Black, Grapko, 1972; Haug, MacPherson, McRae, Olson, Sackett, Sudbury, Wagner), some encompassed two grade levels (Johnson, Moodie, Reid, Traub Design 2 and 4), and several three or more grade levels (Florida, Hill, Kennedy & Say, Killough, Saskatoon, Townsend, Traub Design 1 and 3 , Warner, and York County).[1] Some of the studies were done in the first year of operation of the schools (exceptions: Black, MacPherson, Reid, Wagner).

A few studies had large samples of schools, e.g. Black (12), Florida (14), Traub's Design 1 (18), Wagner (15), but at least six out of the 22 studies used only a single open plan school for their samples (Grapko, 1972 and 1974; Hill, Killough, McRae, Reid, Warner).

1. Studies In Individual Schools

Several of these studies in individual schools were quite interesting. Three are discussed here: Laforge, Reid, Warner. The Laforge study did not focus on academic achievement but considered it as one factor. It was a study of performance differences among students with varying educational experiences (open plan or traditional plan) who were attending one traditional plan junior-senior high school. Half the sample (N = 45, divided evenly by grades 6, 7, 8) had exclusively traditional plan backgrounds; in the other half of the sample (N = 45) grade 6 and 7 students had two years of open plan elementary school, while grade 8 students had one year (grade 6) of open plan schooling. There were few significant differences in achievement by sex, grade or type of schooling. Would there have been differences if students had had all their elementary schooling in open plan?

Reid tested all the children in one grade 4-5 area of MacCorkindale School in Vancouver. The area had been completely open but after several years the teachers decided some students were not coping well with the open space. They divided the area so that 2/3 of it was open and 1/3 was self-contained behind a folding wall. All students were tested in math and reading in both November and June. In reading, all MacCorkindale students had significantly lower means than other grade 5 pupils in Vancouver, but in arithmetic, on all four scales, the open area students at MacCorkindale scored significantly higher.

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[1] Other studies too late to include in this overview are: Kling, Read.

Warner's study was conducted in a school which had both an open and self-contained area for grades 2, 3 and 4. Areas were comparable on all physical features. This is the only study found in which students were randomly assigned to open and self-contained areas, and other factors such as philosophy, school organization and staffing were carefully matched. Overall, there were no significant differences: "one type of facility was not superior to the other when considering academic achievement." (p. 86)

2. Sex Differences

Sex differences have been found in several instances. Warner found that overall, girls in grade 2, 3, 4 tended to score higher than boys on 13/24 test areas. In grade 4 there was a significant interaction with the facility in 7/8 test areas; boys did better in the open area, girls did better in the self-contained classrooms.

Grapko (1974) studied a group of children, in grade 6 and then in grade 7. Approximately half the students had traditional plan elementary schooling, and half had had three years of open plan schooling. Girls with three years of open plan schooling did significantly better in the traditional plan grade 7 than boys with three years open plan experience. Also, boys with three years open plan schooling did poorly in traditional plan grade 7 compared to boys with traditional plan background.

The Florida study showed very mixed results both by sex and race. At grade 3, there were no significant differences between either type of architectural plan for white girls but overall, white children did better in traditional plan classrooms compared to their peers in open plan, while black children did better in open plan. At grade 8, there were no significant differences for black boys in either setting, but black girls and white children did significantly better in traditional plan schools than their counterparts in open plan settings.

Killough's study showed some sex differences but overall he states: "Sex and type of school program did not have a significant interactive effect on the cognitive achievement gains of pupils in open-space facilities." (p. 87)

3. Program

Only one study which has tested for academic achievement in the two types of architectural settings has also controlled for the type of program. The Traub study, done by OISE Evaluation Centre, developed a measure of program openness, Dimensions of Schooling (DISC).

This study had four separate designs and two types of schools. Type I schools had students with a high proportion of English speaking homes, and Type II schools had students with a high proportion of homes where English was a second language. In Design I where most of the students came from English speaking homes, there were no significant differences on the 11 subtests of the Canadian Test of Basic Skills (CTBS) when architectural differences and program openness differences were controlled. Design II, with the same type of students and using CTBS and two other academic measures, results were inconsistent and difficult to interpret. But in Design III and IV where students came from homes where English was a second language, the findings were conclusive. Design III did not measure for differences on architectural openness but only on program openness. "For every CTBS subtest at each grade level, the students in schools with less open programs substantially outperformed the students with more open programs. This finding is the clearest and had the best statistical support of any finding of the present investigation," (Traub et al, p. 16). Likewise in Design IV (one large open plan school, one small closed-architecture school and one large closed-architecture school) differences were again found on program openness rather than on architectural openness: "The less open the school's program, the higher the measured achievement of its students." Schools with a high proportion of non-English speaking students should carefully consider program openness. Architectural openness should encourage program openness but obviously when strong differences are found on program differences and not on architectural differences, open plan schools are not the only schools with open programs. But is there any advantage to an open plan school with a strictly structured program?

The OISE study ends by suggesting that "another reason for lack of consistency in previous results may be that the distinction between inner-city and suburban schools was not made. It may be that program openness influences achievement in one type of school and not another." (p. 390)

4. Longitudinal Studies

Few of the 22 studies were longitudinal. Grapko first tested a group of children in 1972 (66 in a new open plan school, and 47 in a traditional plan school). Overall the results favoured the traditional plan school. He did find that lower I.Q. students did better in traditional space schools, and that there was a larger proportion of lower I.Q. students in the open space.[1] Two years later this same group of children came together in a senior elementary school and they were tested again at Christmas and Easter. As in the earlier phase it was found that there were significant differences for achievement of students who had experience in different types of architectural settings.

There are also two studies which have been follow-ups of the same set of schools. The Saskatoon Study of 1968-69 which compared all the students in grades 4-8 in two new open plan schools was followed up by the MacPherson Study in 1972. The MacPherson Study matched three open plan schools, now all in operation for at least three years, with three traditional plan schools on school size, census tract characteristics and I.Q. scores. It measured only grade 8 students. Whereas the earlier study favoured traditional plan schools, the later, better controlled study, basically showed no statistically significant differences, although the math, language and reading scores were in the direction of favouring traditional plan schools.

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[1] The Saskatoon study also had results from grades 4-8 from two new open plan schools which favoured traditional plan schools, but students in the open space had a lower mean I.Q.

The McRae and Moodie Studies used reading tests to see how students from open plan schools achieved in a traditional plan secondary school. The McRae study administered the tests both at the beginning and the ending of the school year. The 34 students from traditional elementary schools achieved better on all three scores at the beginning of the school year. By the end of the year there were no significant differences on speed or accuracy or vocabulary, but the 34 students with traditional plan background were still achieving better in comprehension. It should be pointed out that the 34 open plan students were all from one class of one open plan elementary school. Approximately a year later, Moodie used the same test on the grade 7 students (open plan students, N = 48; traditional plan students, N = 409) who were going to be going to the same traditional plan high school. Once again, the results on speed and accuracy favoured the traditional plan, but there were no significant differences on the other two scores. After the students were in the traditional plan high school for five months, there were no significant differences on any of the three scores.

Killough did a longitudinal study over a four year period, comparing 132 students from one open plan school with 135 students from three traditional plan schools. He had a sample of 15 boys and 15 girls at each grade level (1 - 4) randomly selected from each type of school. After one year there were no significant differences, but after year 2 and 3, with the exception of arithmetic concepts, there were significant differences favouring the open space school for all other dependent variables.

York County, as a part of its Studies of Open Education, did a longitudinal study starting with a group of grade one children in two open plan schools and in 7-10 traditional plan schools. In none of the three studies during the three years did they find any significant differences between the two settings. In the third year they stated, "the only reasonable interpretation of the achievement data gathered over the years is that we must look elsewhere for differences, if they are to be found in the Primary Division." (p. 15)

R.C. Wagner is one researcher who looked elsewhere because of the inconsistencies and the recurring "overall no significant differences." He stated, "success or failure in the schools continues to be measured in terms of academic achievement ... since there are indications that some pupils are experiencing difficulty in open plan schools, it seemed that the most urgent problem was one of effectively identifying those students" (p. 29 of draft). He used the Children's Embedded Figure Test with 253 children from 15 schools which divided the sample in the following way:

Number Of Students In Each Category

	Field Independent		Field Dependent	
	Male	Female	Male	Female
Open Plan	31	25	18	27
Traditional Plan	39	35	44	34

He cites Witkin's research[1] on field dependent/field independent children to show that there is substantial evidence to indicate that there are differences between them in what, and how, they learn, although there appears to be no differences in their ability to learn new material.

Wagner made three hypotheses all of which are holding up to statistical testing.

1. Field-independent subjects will achieve significantly greater academic achievement scores than field-dependent subjects in open plan classrooms.

2. Field-dependent subjects will achieve significantly greater academic achievement scores in traditional plan classrooms than in open plan classrooms.

3. Field-independent subjects will achieve as well academically in open plan classrooms as in traditional plan classrooms.

Field dependent children are characterized by:

1) poorly developed self-concept,

2) poorly developed control structure; that is, easily distracted and/or overactive,

3) a lack of developed interests,

4) an inability to assume responsibility,

5) a lack of enterprise and initiative,

6) a marked dependence on external sources of support and guidance.

Field independent children, who are almost exactly the opposite, "would be better able to cope with the increased personal exposure, increased environmental stimuli and increased pupil freedom and responsibility" of the open plan. (p. 25 draft) Perhaps a different approach to placing children in structured or non-structured environments is indicated.

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[1] Herman A. Witkin, Psychological Differentiation, (New York, Wiley, 1962).

APPENDIX VII

SUMMARY OF E5 FINDINGS[1]

As the original SEF Evaluation is out of print, the findings from that study are reproduced here.

Despite the need for additional and more refined analyses, a number of general statements can be made at this time. The usual qualifications concerning interpretation, sampling error, confidence levels, etc. are appropriate. Nonetheless, we have a great deal of confidence in the following findings.

General Observations

1. All types of schools in the study have quite satisfactory educational environments from the standpoint of the majority of users.

2. Each school is unique. There is as much variety or more within each of the three school types as there is between SEF and non-SEF, or between SEF and other open plan schools.

3. Teachers assign more importance to atmospheric conditions, noise control, floor area and layout than they do to other characteristics of the school building. They are least concerned about appearance, electrical outlets and visual privacy. Outdoor area, storage and furniture are judged to be moderately important.

4. The greatest concerns of users in all types of schools are with atmospheric and noise control; the next greatest problems are in layout, floor area and storage.

5. Teachers and students appear to differ as to what constitutes comfortable atmospheric conditions.

6. There is extreme variability in the use of audio-visual devices from school to school. This may relate in part to inventory, availability of outlets, and teacher training.

7. Field trips occur more frequently in the inner city schools.

8. Teachers perceive that the principals have the most influence in instituting program changes, but if the teachers have their way, they would have more influence on the school program than the principal. Teachers also feel that students and parents have little influence over program changes and that this is desirable. Principals are generally well pleased with existing influence patterns.

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[1] E5: Academic Evaluation: An Interim Report, (Toronto: Metropolitan Toronto School Board, 1971), p. 113-116.

9. More sophisticated analytic techniques are required to distinguish the influence of teachers from the influence of the physical environment with respect to activity levels in schools.

10. The vast majority of children like school and feel they have enough freedom, although most are occasionally bored.

11. There is a considerable amount of goodwill toward the school from the public; those persons with children in school are the most pleased.

12. Although they disagree about who should pay the extra cost, most citizens are pleased with the existing permit arrangements for community use of the school building.

13. A significant number of citizens would have the school: reduce costs; extend program; and return to traditional methods.

Three other matters should be noted in addition to the above findings:

1. An observation instrument has been developed which distinguishes open style teaching without regard to the openness of the facility.

2. The advice of experienced open plan teachers to those trying open space teaching for the first time is to: schedule, organize, establish routines; and be flexible, tolerant, and considerate of others.

3. A great many teachers have moved readily and rapidly toward effective use of open plan facilities and to creative and innovative use of traditional plan schools.

Comparisons Among The Three Types Of Schools

1. From the standpoint of the users, all things considered, NSO[1] schools are just as satisfactory educational environments as are SEF schools. While there are differences favoring SEF or NSO on specific items or characteristics of the facility, the magnitude of these differences from school to school within both SEF and NSO types is generally much larger than the average difference between the types. The large overriding differences are generally found between new (open plan) schools and older (traditional plan) schools.

2. The environments provided by older schools are not as satisfactory to users as those found in newer schools. (All the open plan schools are new or newly remodelled.)

3. Open plan schools work well for many people. On the average, students in the open plan schools feel that they spend fewer hours in their class area, go to other areas of the school more often, and talk to a larger number of teachers than do children in traditional schools. Furthermore, they feel that they use

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[1] Non-SEF Open Plan Schools.

the audio-visual equipment more often, visit the library more often, go on field trips more often, and rearrange their chairs and desks more often than students in traditional schools.

4. Open style teaching occurs in traditional plan schools but not as frequently as in open plan schools. Traditional plan schools may not be as conducive to cooperative teaching. More variable groupings occur in open plan schools.

5. Teachers in traditional plan schools report that they spend more time on individual planning than do teachers in open plan schools. However, more joint planning takes place in open plan schools.

6. Three-quarters of the teachers in traditional plan schools say they like the enclosed classroom more than do other teachers they know. However, less than half the teachers in open plan schools claim to like the enclosed classroom more than do other teachers they know.

7. Open plan schools are noisier and there is dissatisfaction with the provision of chalkboard and display surfaces.

8. Many users in the older traditional plan schools indicate that the provision of electrical outlets is insufficient.

9. The relationship between open style (high activity) teaching and behavioral outcomes in students has not been established. It seems probable that students attending open style schools will display different attitudes toward information and different tendencies regarding teamwork.

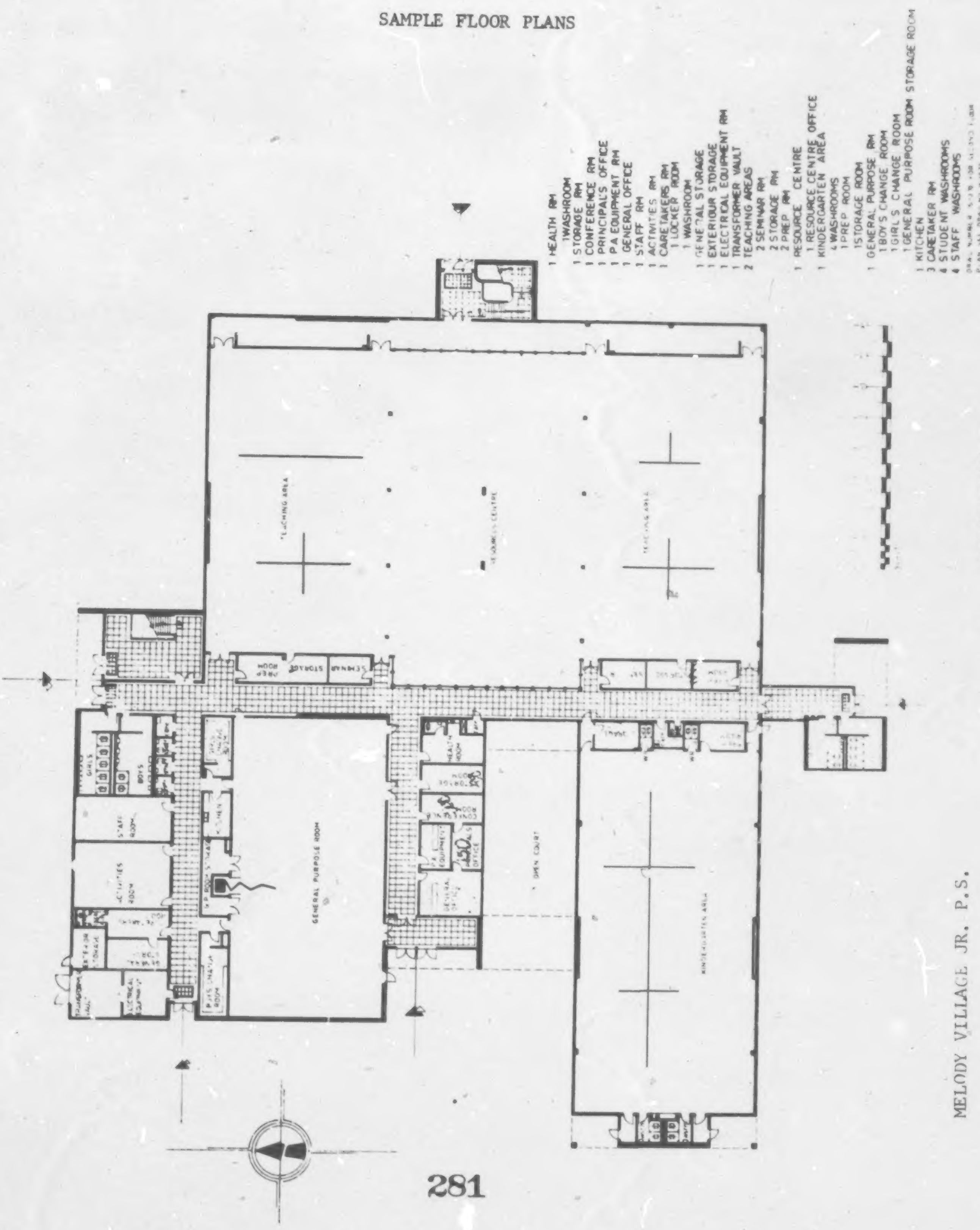
APPENDIX VIII

LIST OF SEF BUILDINGS

Board	Building	Panel	Gross Area (sq.ft.)	Building Cost/sq.ft.
Etobicoke	Melody Village	(K-5)	60,585	25.96
	Albion Heights	(K-5)	57,499	22.05
North York	Denlow Blvd.	(K-6)	48,276	25.58
	Ranchdale Crescent	(K-6)	51,972	22.72
	Don Valley	(7-8)	72,750	25.06
	Pleasantview	(7-9)	87,510	22.73
	Hillmount	(K-6)	34,275	23.90
	Firgrove	(K-6)	43,414	23.66
	Windfields	(7-9)	82,031	24.40
Scarborough	Brooks Road	(K-6)	45,744	21.89
	Cedar Drive	(K-6)	45,744	22.15
	Iroquois	(K-6)	45,744	21.95
	Beverly Glen	(K-6)	53,859	23.03
	Charles Gordon	(7-8)	72,675	23.75
	Sir Alex. MacKenzie	(7-8)	50,752	23.58
	Henry Kelsey	(7-8)	74,480	23.93
Toronto	Howard	(K-6)	57,695	23.57
	Roden	(K-6)	80,587	21.05
York	George Syme	(K-6)	74,884	23.57
	Arlington	(7-8)	83,949	24.10
	Administration Building	-	33,341	27.66
Total First SEF Building System - 21 Buildings			1,257,722	23.57
East York	R.H. McGregor	(K-6)	69,504	20.68
	Administration Building	-	35,374	22.59
Toronto	Withrow	(K-6)	71,108	21.47
York	Humewood	(K-6)	64,678	23.56
Total 1B SEF Building System - 4 Buildings			240,664	21.97
Etobicoke	John D. Parker	(K-5)	33,832	17.73
Scarborough	Brookmill Blvd.	(K-6)	34,932	19.38
	Chester Blvd.	(K-6)	34,932	19.29
	Brimwood Blvd.	(K-6)	34,932	19.28
M.T.S.B.	Wm. J. McCordic School for the Retarded	Junior	33,749	19.41
Total Second SEF Building System - 5 Buildings			172,377	19.02
Total All SEF BUILDING SYSTEMS - 30 Buildings			1,670,813	22.87

APPENDIX IX

SAMPLE FLOOR PLANS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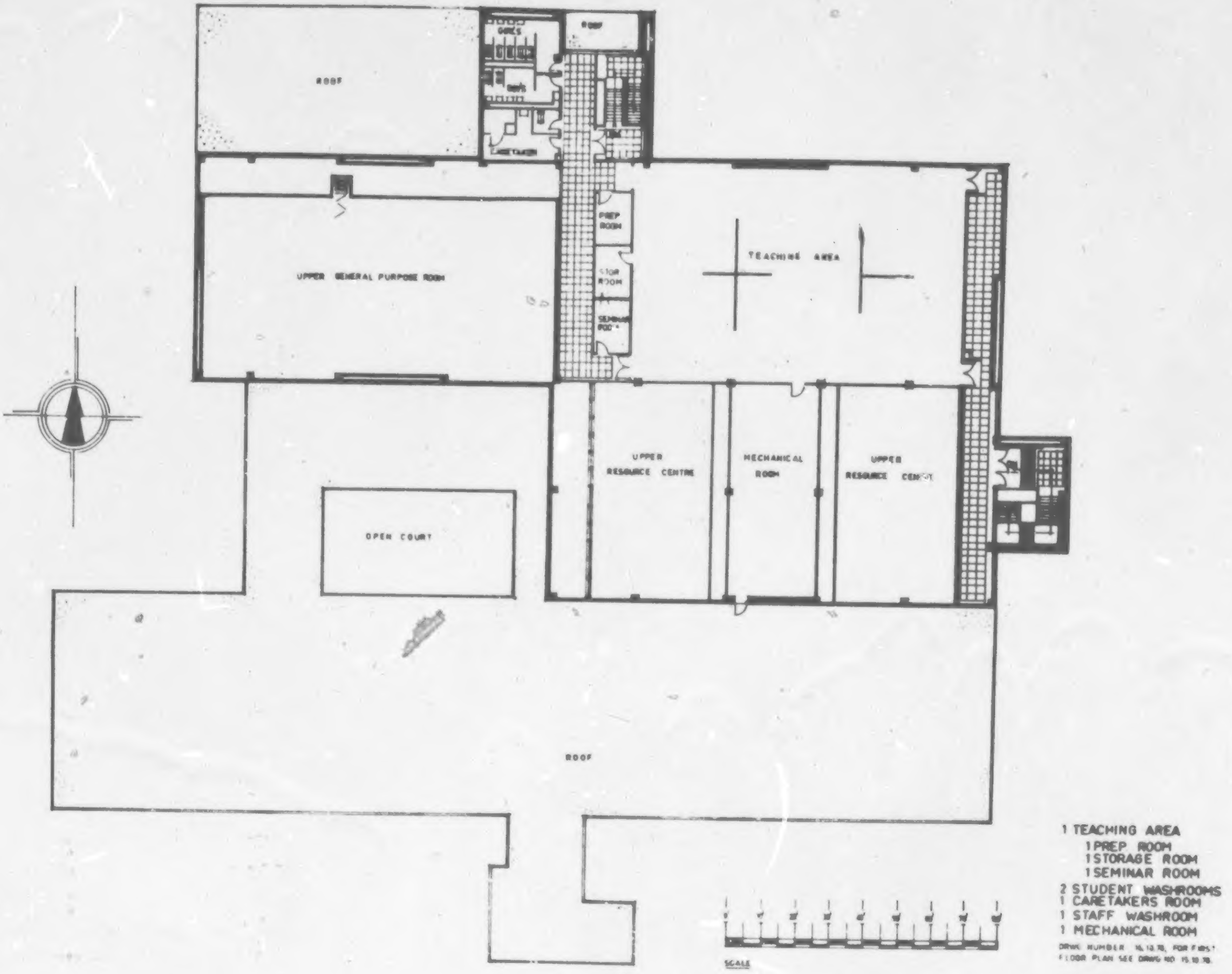
1 STORAGE RM
1 CONFERENCE RM
1 PRINCIPAL'S OFFICE
1 P A EQUIPMENT RM
1 GENERAL OFFICE
1 STAFF RM
1 ACTIVITIES RM
1 CARETAKERS RM
1 LOCKER ROOM
1 WASHROOM
1 GENERAL STORAGE
1 EXTERIOUR STORAGE
1 ELECTRICAL EQUIPMENT RM
1 TRANSFORMER VAULT
2 TEACHING AREAS
2 SEMINAR RM
2 STORAGE RM
2 PREP RM
1 RESOURCE CENTRE
1 RESOURCE CENTRE OFFICE
1 KINDERGARTEN AREA
4 WASHROOMS
1 PREP ROOM
1 STORAGE ROOM
1 GENERAL PURPOSE RM
1 BOY'S CHANGE ROOM
1 GIRL'S CHANGE ROOM
1 GENERAL PURPOSE ROOM STORAGE ROOM
1 KITCHEN
3 CARETAKER RM
4 STUDENT WASHROOMS
4 STAFF WASHROOMS
TEACHING AREA
RESOURCE CENTRE
TEACHING AREA
PREP ROOM
STORAGE
SEMINAR
GIRLS
BOYS
STAFF ROOM
ACTIVITIES ROOM
KITCHEN
GENERAL PURPOSE ROOM
HEALTH ROOM
STORAGE ROOM
CONFERENCE ROOM
P.A. EQUIPMENT
PRINCIPAL'S OFFICE
GENERAL OFFICE
OPEN COURT
KINDERGARTEN AREA
TRANSFORMER VAULT
ELECTRICAL EQUIPMENT

MELODY VILLAGE JR. P.S.

FIRST FLOOR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GIRLS
BOYS
CARETAKER
ROOF
PREP ROOM
STOR ROOM
SEMINAR ROOM
TEACHING AREA
UPPER GENERAL PURPOSE ROOM
UPPER RESOURCE CENTRE
MECHANICAL ROOM
UPPER RESOURCE CENTRE
OPEN COURT
ROOF
SCALE
1 TEACHING AREA
1 PREP ROOM
1 STORAGE ROOM
1 SEMINAR ROOM
2 STUDENT WASHROOMS
1 CARETAKERS ROOM
1 STAFF WASHROOM
1 MECHANICAL ROOM
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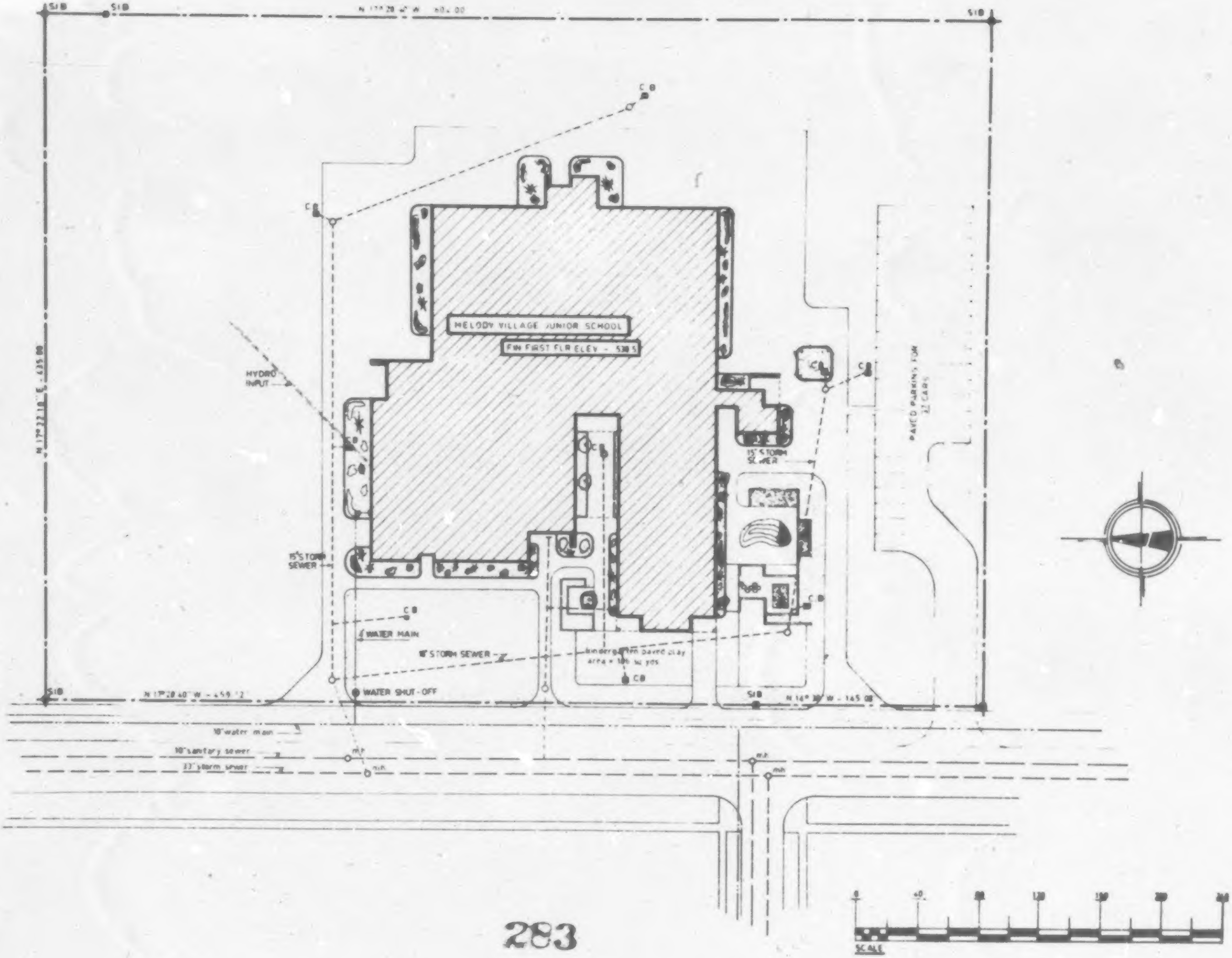
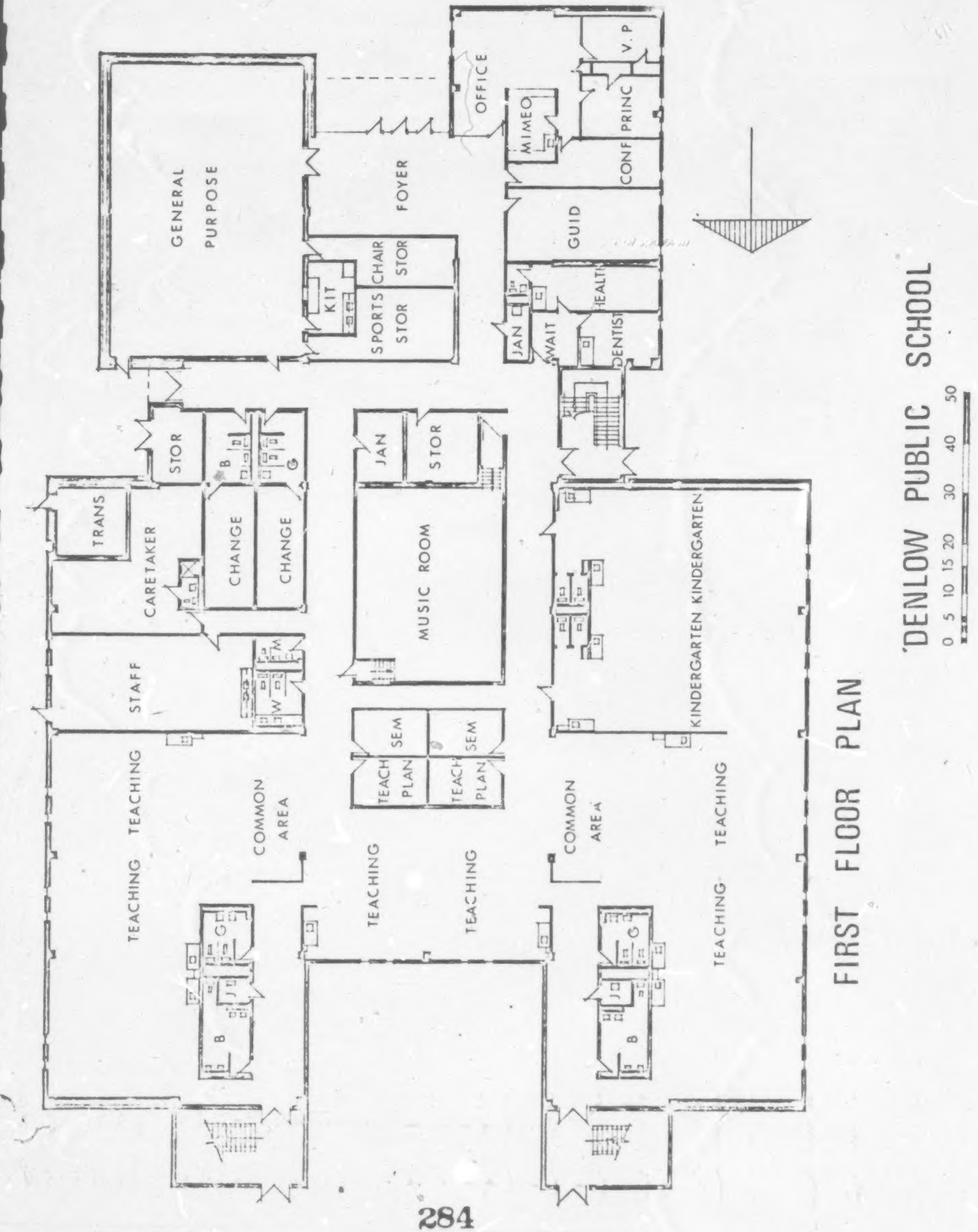
MELODY VILLAGE JR. P.S.

SECOND FLOOR


SIB
SIB
N 17° 28' 40" W - 604.00
SIB
N 17° 22' 10" E - 435.00
C B
C B
MELODY VILLAGE JUNIOR SCHOOL
FIN FIRST FLR ELEV - 538.5
HYDRO INPUT
C B
C B
PAVED PARKING FOR 32 CARS
15" STORM SEWER
15" STORM SEWER
C B
C B
6" WATER MAIN
18" STORM SEWER
kindergarten paved play area = 186 sq yds
C B
WATER SHUT-OFF
SIB
N 17° 28' 40" W - 459.12
SIB
N 14° 30' W - 145.08
10" water main
10" sanitary sewer
33" storm sewer
m.h.
m.h.
m.h.
m.h.
0
40
80
120
160
200
240
SCALE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FOYER
OFFICE
MIMEO
V. P
PRINC
CONF
GUID
HEALTH
DENTIST
WAIT
JAN
CHAIR STOR
SPORTS STOR
KIT
STOR
B
G
CHANGE
CHANGE
TRANS
CARETAKER
STAFF
M
W
JAN
STOR
MUSIC ROOM
KINDERGARTEN
KINDERGARTEN
SEM
SEM
TEACH PLAN
TEACH PLAN
COMMON AREA
COMMON AREA
TEACHING
TEACHING
TEACHING
TEACHING
TEACHING
TEACHING
TEACHING
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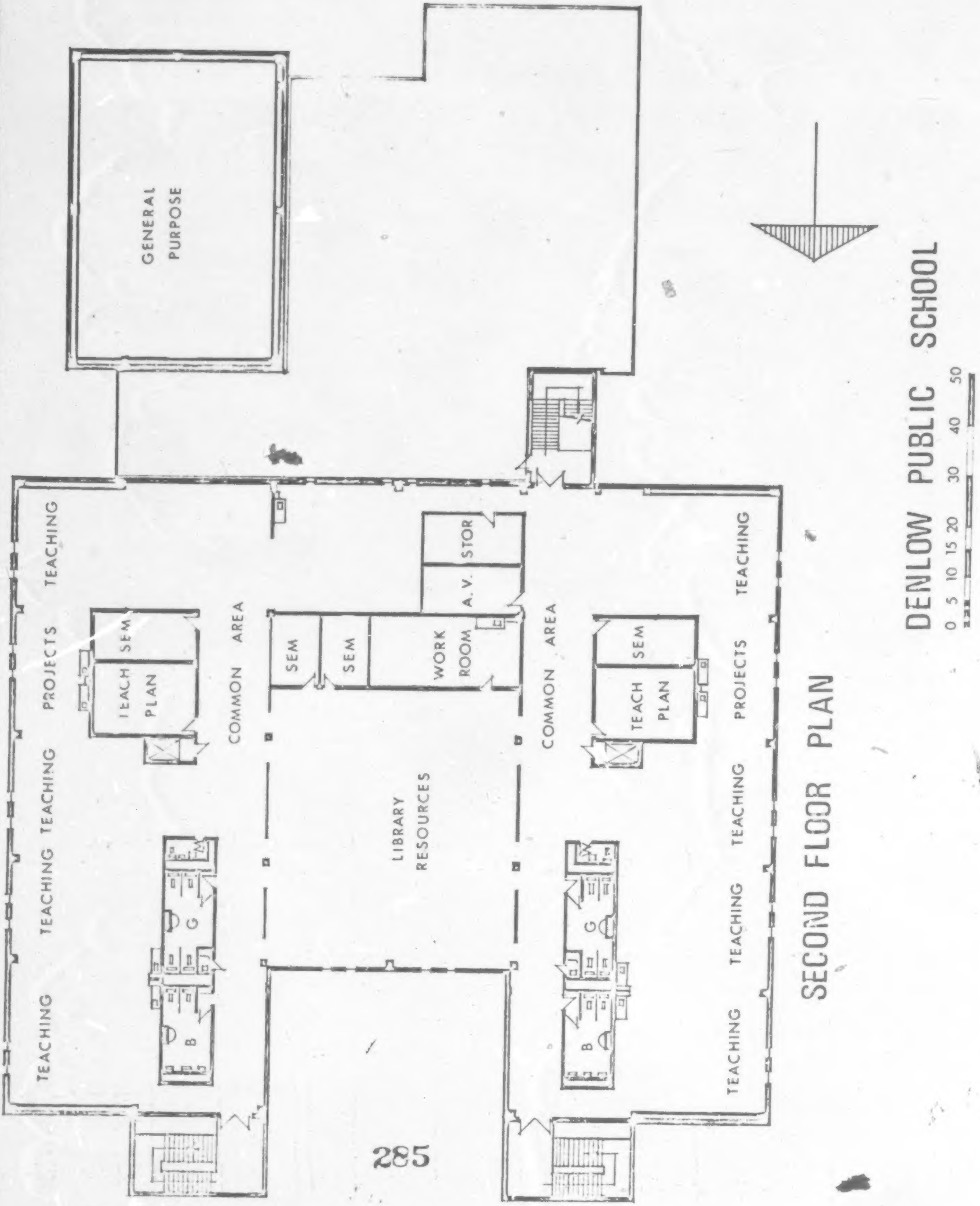
G
J
B
G
J
B
0 5 10 15 20 30 40 50

FIRST FLOOR PLAN

'DENLOW PUBLIC SCHOOL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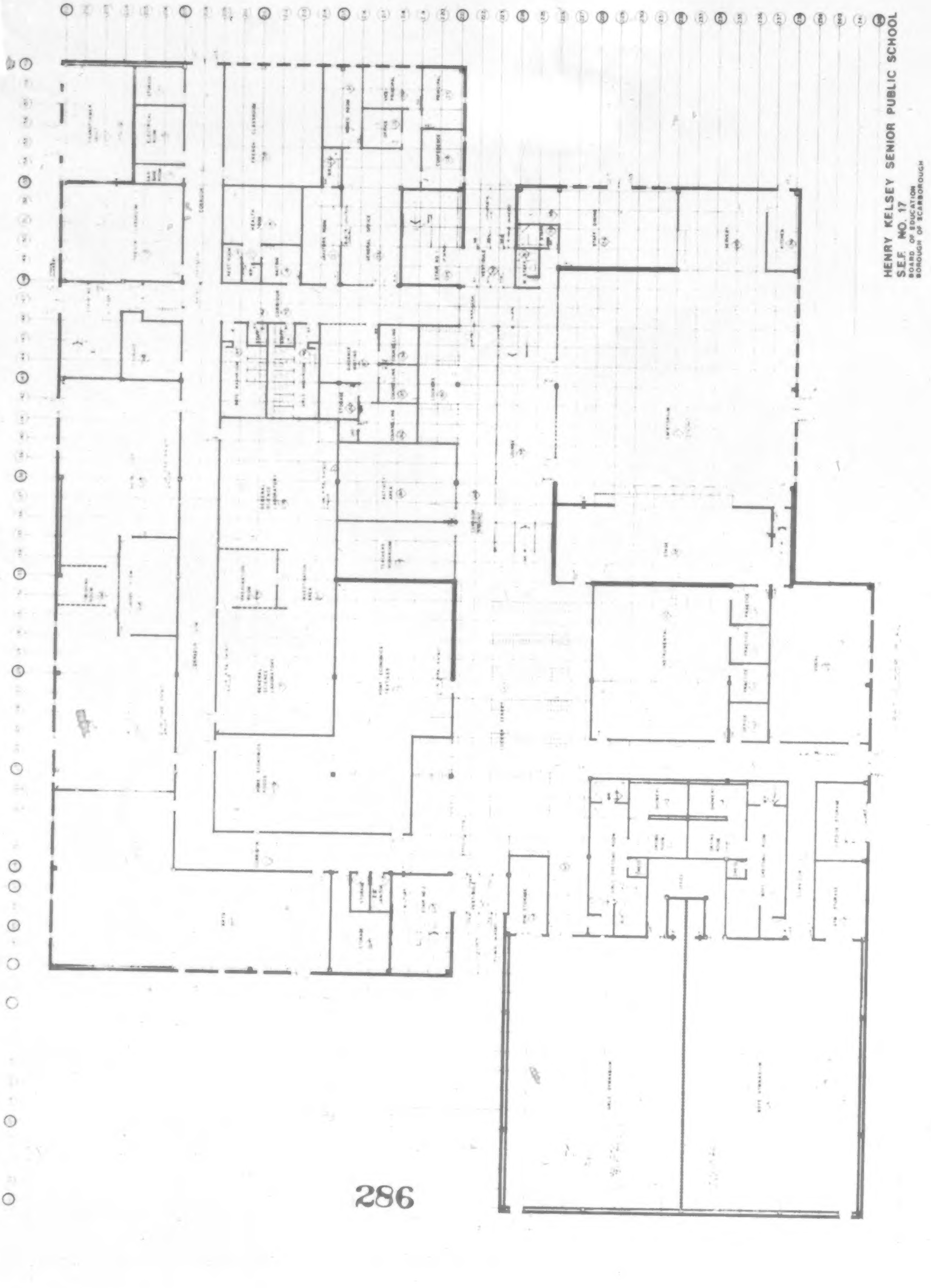
TEACHING
PROJECTS
TEACHING TEACHING
TEACHING
TEACHING
SEM
TEACH PLAN
COMMON AREA
SEM
SEM
WORK ROOM
A.V.
STOR
LIBRARY RESOURCES
G
B
COMMON AREA
SEM
TEACH PLAN
TEACHING
PROJECTS
TEACHING
TEACHING
TEACHING
G
B
0 5 10 15 20 30 40 50

SECOND FLOOR PLAN

DENLOW PUBLIC SCHOOL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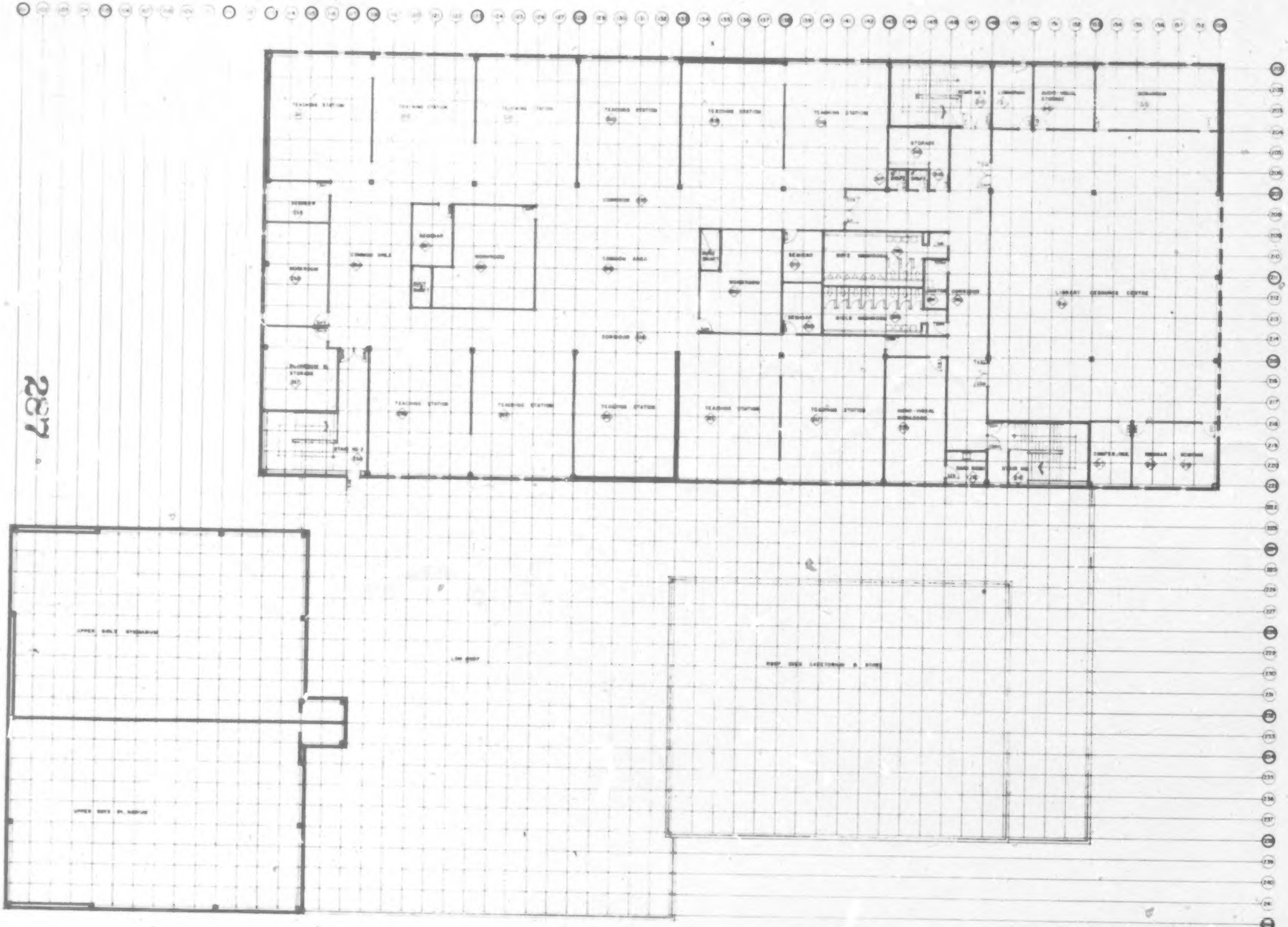
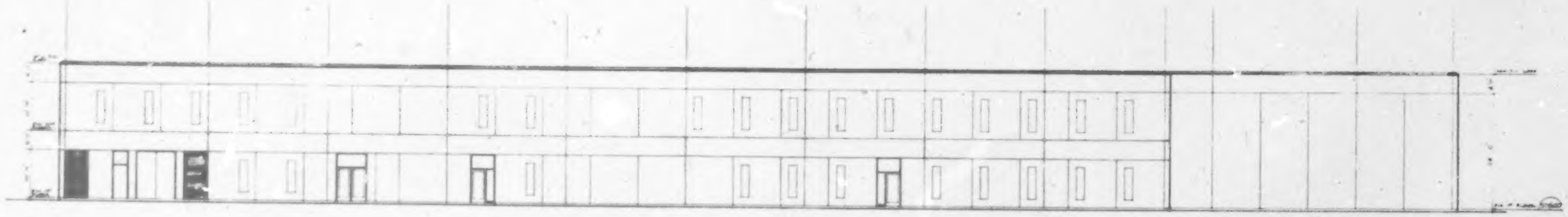
S.E.F. NO. 17
BOARD OF EDUCATION
BOROUGH OF SCARBOROUGH

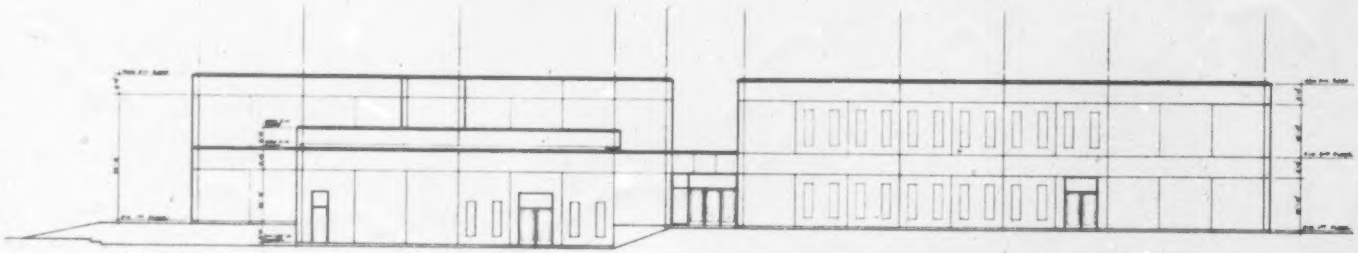

TEACHING STATION
COMMON AREA
CORRIDOR
WORKROOM
SEMINAR
STORAGE
PLUMBING & STORAGE
STAIR NO. 2
BOYS WASHROOM
GIRLS WASHROOM
AUDIO-VISUAL WORKROOM
AUDIO-VISUAL STORAGE
LIBRARY RESOURCE CENTRE
CONFERENCE
LOW ROOF
UPPER GIRLS GYMNASIUM
UPPER BOYS GYMNASIUM

SECOND FLOOR PLAN

HENRY KELSEY SENIOR PUBLIC SCHOOL
S.E.F. NO. 17
BOARD OF EDUCATION
BOROUGH OF SCARBOROUGH

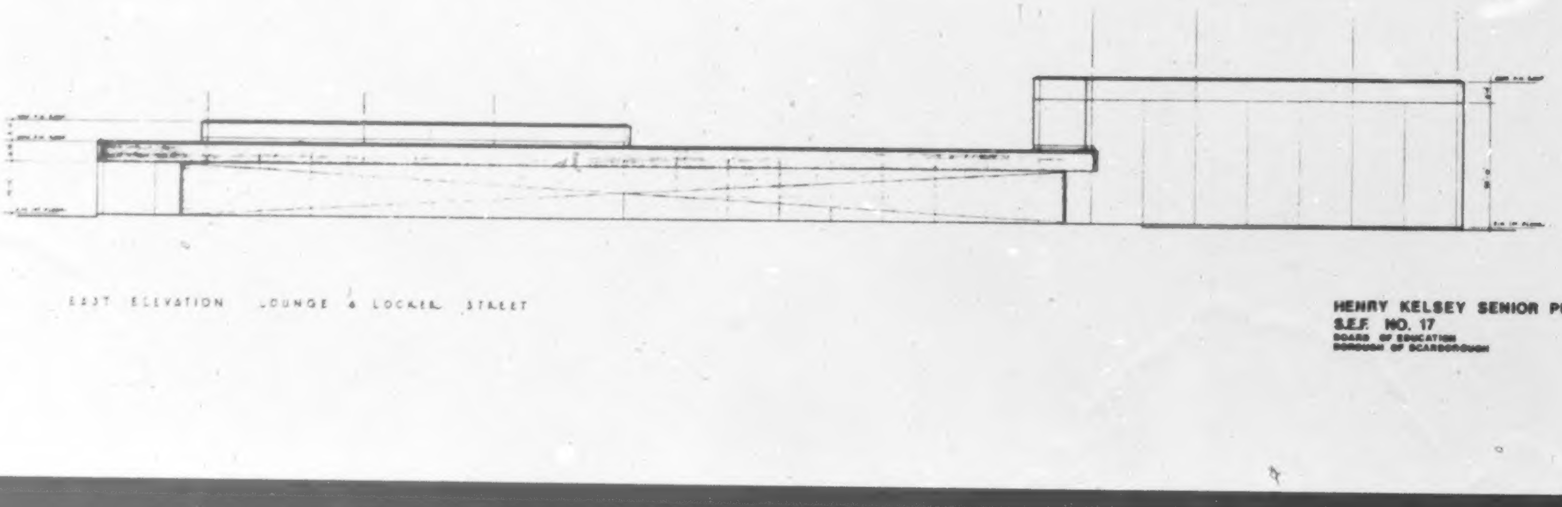


EAST ELEVATION



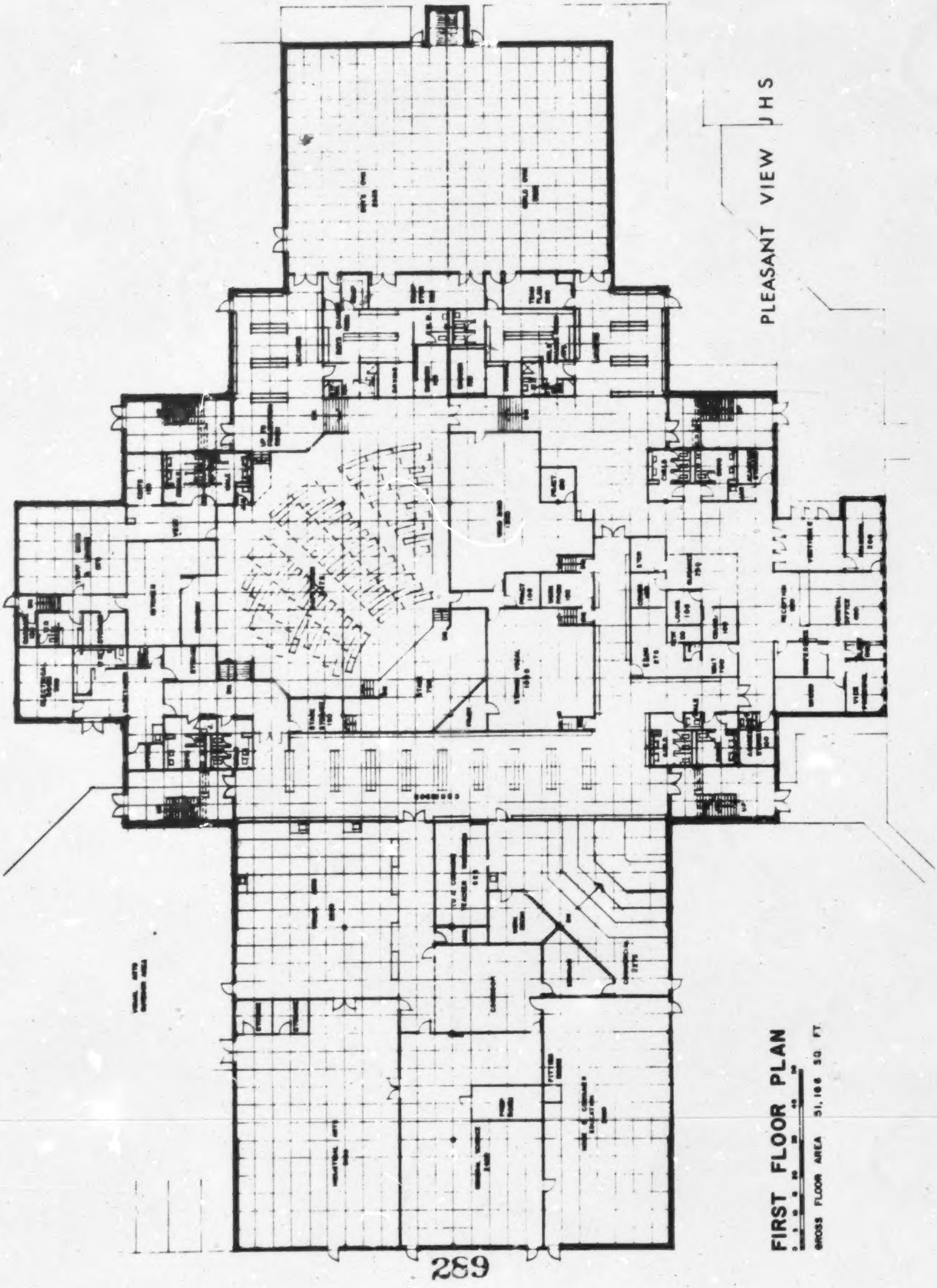
SOUTH ELEVATION

PART NORTH ELEVATION



EAST ELEVATION LOUNGE & LOCKER STREET

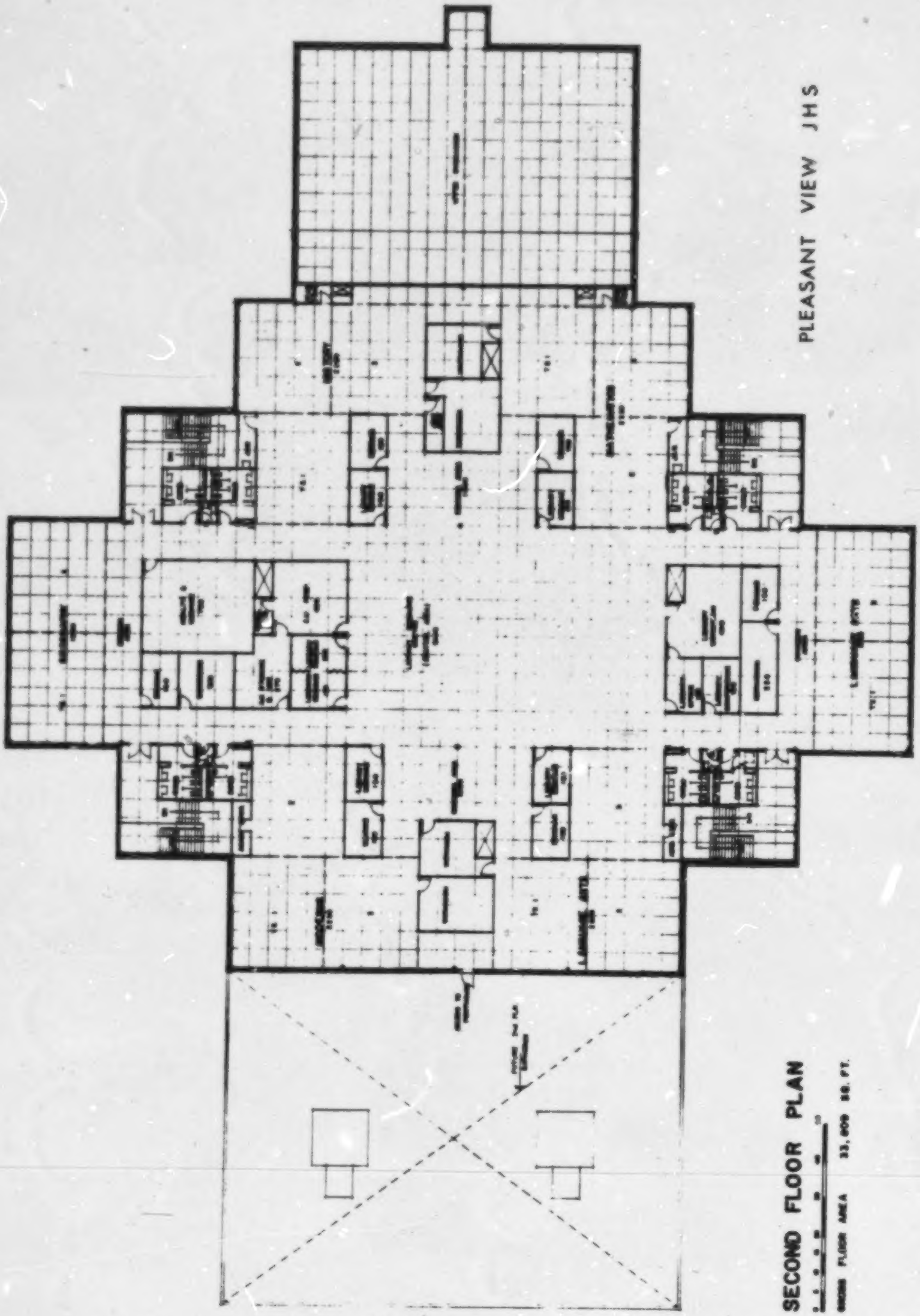
HENRY KELSEY SENIOR PUBLIC SCHOOL
S.E.F. NO. 17
BOARD OF EDUCATION
BOROUGH OF SCARBOROUGH


PLEASANT VIEW JHS
0 5 10 20 30 40 50

FIRST FLOOR PLAN

GROSS FLOOR AREA 51,166 SQ FT

PLEASANT VIEW JHS



SECOND FLOOR PLAN

GROSS FLOOR AREA 33,200 SQ. FT.

APPENDIX X

GLOSSARY

All items in the Glossary are defined as they are used in this report.

Area

Refers to the teaching area where individual teachers spend most of their teaching day.

Area Adequacy Scale

This scale is based on teachers' (excluding principals and vice-principals) ratings on the adequacy of the location, acoustics, lighting and atmosphere of their teaching areas. See Also School Adequacy Scale.

Audiovisual Scales (AV Scales)

The scales were based on student use of film, slides and filmstrips, audio equipment, and television. The summation of the answers from both student questionnaire (items 57-60) and teacher questionnaire (items 58-61) were trichotimized to provide high, medium and low use categories.

Canter Environmental Assessment

A 10 item list of bipolar adjectives (e.g. adequate - inadequate; see pages 223-226) used to assess general satisfaction with teaching area, school building as a whole and the library resource centre.

The list is identical to the one developed by David Canter, previously with the University of Strathclyde, now with the University of Surrey, England. Items were analyzed by a new computer program, RAVE. The analysis showed that each of the scales - area, school building and library resource centre - were separate dimensions and were also highly reliable scales.

Dimensions of Schooling Questionnaire (DISC)

A 30 item instrument developed by OISE to measure openness of program. Teachers respond to the items in terms of what they perceive actually happening in their school and classroom situation. Instrument is in Appendix, III, pages 227-242.

DISC Teacher Score: The teacher's average of answers to all 30 items was the teacher DISC score. Scores ranged from 0.10 to 0.75 with a mean of 0.415. These individual DISC scores were dichotomized into High and Low DISC scores for analysis of teacher data.

School DISC Score: A measure of program openness for each school. School Score was an average of the teachers' scores within each school. School Score was crosstabulated with student variables.

DISC Consensus: A measure of agreement among teachers about extent of program openness in their school. The standard deviation of the average DISC scores of the teachers within each individual school were ranked from the lowest (.066) to the highest (.312). The list was dichotomized into high consensus and low consensus, score was crosstabulated with teacher variables.

District Income

Average income of school area based on School boundaries and 1971 census. Used as measure of Socioeconomic Status.

E5 Academic Evaluation: An Interim Report (cited as E5)

The report of the first evaluation of SEF schools done in the first year of operation of the schools. Eight of the nine K-6 SEF schools were used in the study. The other K-6 school was used for the pretest, and the one junior high school was omitted. The basis of comparison was four non-SEF open plan schools and four non-SEF traditional plan schools.

E5 Seconday Analysis

A study done at York University by J. Durlak, J. Lehman and J. McLain entitled *The School Environment: A Study of User Patterns*. The analysis used the data collected for the SEF E5 study. It compared the eight open plan schools with the eight traditional plan schools, and also compared schools high on activity (as measured by systematic observation) and low on activity.

E6

The current study. Includes all 23 SEF schools from the first building system. One K-6 school was used for the pretest and is not included in the overall data. The main purpose was to assess SEF schools as a working place for students and teachers. One major comparison is between K-6 and 7-9 schools.

Electric-Electronic Service Column see Service Column

Electronic Service Column see Service Column

Ethnic Scale

Students were asked whether they were born in Canada or not, and whether English was the first language they learned to speak or not. These two questions are the basis for the four categories of the Ethnic Scale (1) Born in Canada, English first language spoken, (2) Born in Canada, English not first language spoken, (3) Not born in Canada, but English was first language spoken, (4) Not born in Canada and English was not first language spoken.

Family Grouping

Also referred to as multi-age grouping or vertical grouping. A grouping of students within a school, or a teaching area, or a subject, which includes students of various ages. It may be on irregular basis or on a full time basis.

Feeder School

K-6 schools from which the 7-9 schools draw their students.

Folding Wall

Any kind of moveable floor to ceiling partition between teaching areas. Sliding walls, accordion walls, folding panels are all included.

Ideal Open Plan School Scale (IOP)

A scale devised from 14 items; teachers ranked each item from one to seven as a good descriptor or a poor descriptor of their school. Three items concerned students, three concerned teachers, two concerned principals and four concerned the building. See Appendix, pages 219-222.

Items were analyzed by a new computer program, RAVE. The scale had no negative correlations. There were three clusters: Students, staff relationships and the building. Nonetheless all items were highly intercorrelated.

Intermediate Schools see 7-9 schools

Junior Schools see K-6 schools

K-6 Schools

Schools which serve from junior kindergarten to grade six inclusive. This category includes the two schools from Etobicoke which extend from junior kindergarten to grade five.

Multi-age Grouping see Family Grouping

OISE

The Ontario Institute For Studies in Education. The graduate school of education at the University of Toronto.

Occupancy Rate

Occupancy rate is determined by taking enrolment as a percentage of the rated capacity. (1) High occupancy schools were at capacity or within 12% of the rated capacity (2) Medium occupancy schools from 15-22% below rated capacity. (3) Low occupancy schools from 30-70% below rated capacity.

Open Area

Any teaching area which has from 0-3 walls. Used interchangeably with open space.

Open Education

A philosophical and practical approach to teaching which stresses that knowledge and skills are learned when needed. The essence of openness in a program is participation and choice for both students and teachers. Open education may take place in open area classrooms or traditional plan classrooms. The measure for open programs in this study was DISC.

Open Plan School

Any school which has some open space teaching areas. All 23 SEF schools were open plan schools.

Open Space

Any teaching area which has from 0-3 walls. Used interchangeably with open area.

Power Pole see Service Column

Privacy Scale

Responses from two questions asking teachers if there was enough privacy for them, and enough privacy for students were combined to form an overall Privacy Scale.

RAVE

A computer program developed at York University, Insitute For Behavioural Research, by Dr. Brent Rutherford. The program maximizes the reliability of scales. It works with a covariance matrix, examines every single subscale. Unlike Item Analysis, it does not automatically discard items but the program can shrink the scale if there are 'poor' items; there is an incremental removal of items in order to give the highest reliability.

SES (Socio-Economic Status)

The two categories of low and high SES were established on the basis of average income as of 1971 census. Average income of a school district correlated highly with several other socio-economic indicators.

Senior Public Schools

Schools which serve only grade 7 and 8 students. In E6 there are schools from Scarborough and York in this category.

7-9 Schools

Includes both senior public schools which only have grades 7 and 8, and junior high schools which have all three grades. In E6 there are schools from Scarborough, North York and York in this category.

School Adequacy Scale

This scale is based on teachers' and principals' ratings on the adequacy of layout, acoustics, lighting and atmosphere of their schools.

Service Column

A flexible addition to the electric-eletronic system, and part of the overall SEF communication system. It provides services to any area where no wall exists. The columns are plugged into the ceiling system at any intersection of the 5 x 5 ceiling grid. There are three types of service columns, one which has power only, one with power and intercom telephone and a third with power telephone and a complete sound reinforcement station. Microphones, extension speakers, headsets and any type of audiovisual equipment may be plugged in. There is also potential for an internal TV cable.

Socio-Economic Status see SES

Subject Teachers

Includes all classroom teachers in any subject area. It excludes principals, vice-principals, chairmen of departments, kindergarten teachers and any special teachers. K-6 N=225, 7-9 N=131.

Teaching Area see Area

Team Teaching

Broadly defined as a group of teachers who share major responsibility for the same group of students and who coordinate their instructional activities among themselves.

Traditional Plan School

Any school which has mainly enclosed areas both for specialized subjects and for classroom teaching. Used in architectural sense, not in program sense.

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